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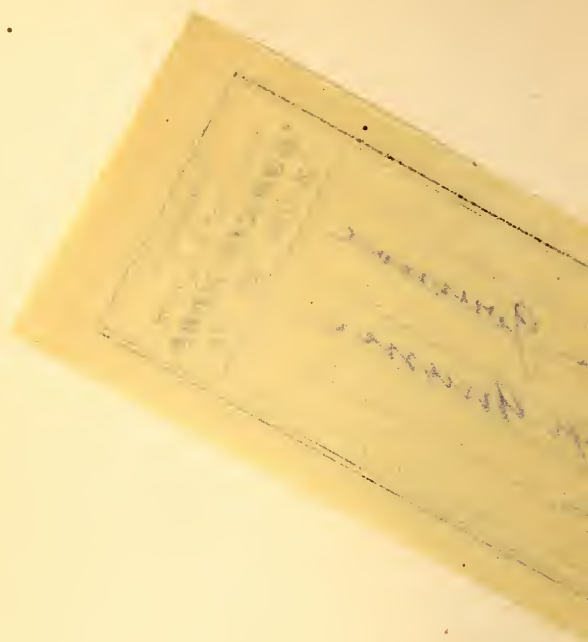
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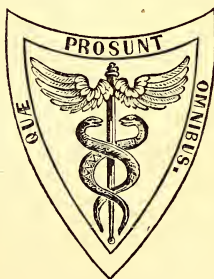
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THE following works have been received:—

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Second series. Vol. XV. London, 1850. (From the Society.)

Transactions of the American Medical Association. Vol. III. Philadelphia, 1850.

The New Jersey Medical Reporter, and Transactions of the New Jersey Medical Society. Edited by JOSEPH PARRISH, M. D. October, 1850.

Proceedings of the first annual meeting of the Indiana State Medical Society, held in the city of Indianapolis. May, 1850.

The Classification of Insects from Embryological Data. By Prof. LOUIS AGASSIZ. (Presented to the American Association for the Advancement of Science at Cambridge. August, 1849. (From the Author.)

Contributions to the Natural History of the Acalephæ of North America. By L. AGASSIZ. (From the Author.)

Renal Affections: their Diagnosis and Pathology. By CHARLES FRICK, M. D. Philadelphia, 1850. (From the Publishers.)

The Races of Men. A Fragment. By ROBT. KNOX, M. D., Lecturer on Anatomy, &c. Philadelphia: Lea & Blanchard, 1850. (From the Publishers.)

Woman; her Disease and Remedies. A series of Letters to his Class. By CHARLES D. MEIGS, M. D., Professor, &c. Philadelphia: Lea & Blanchard, 1850. (From the Publishers.)

Proceedings of the Medical Convention, for the purpose of organizing the Illinois State Medical Society, held at Springfield, June 4th, 1850; together with the constitution, by-laws, and code of Ethics, adopted by the Society. Chicago, 1850.

Transactions of the Belmont Medical Society for 1849-50. Published by the Society. Bridgeport, Ohio, 1850.

Summary of the Transactions of the College of Physicians of Philadelphia. (June 7th to Oct. 1, 1850, inclusive.)

Household Surgery: or Hints on Emergencies. By JOHN F. SOUTH, one of the Surgeons of St. Thomas' Hospital. First American, from the second London edition. Philadelphia: Henry Carey Baird, successor to E. L. Carey, 1850. (From the Publisher.)

A Treatise on the Diseases and Surgical Operations of the Mouth, and parts adjacent; with notes of interesting cases, ancient and modern. By M. JOURDAIN, Dentist, &c. Translated from the last French edition. Philadelphia: Lindsay & Blakiston, 1850. (From the Publishers.)

Sleep, Psychologically considered with reference to Sensation and Memory. By BLANCHARD FOSGATE, M. D., Physician to New York State Prison at Auburn. New York, 1850. (From the Author.)

Review of Chemistry for Students. Adapted to the courses as taught in the

principal Medical Schools of the United States. By John G. Murphy, M. D. Philadelphia: Lindsay & Blakiston, 1850. (From the Publishers.)

Address before the American Medical Association, at the Anniversary Meeting in Cincinnati, May 8th, 1850. By J. C. WARREN, M. D., President of the Association. Boston, 1850.

Report of the Standing Committee on Medical Literature, presented to the American Medical Association at its third Annual Meeting, held in Cincinnati, May, 1850. Philadelphia, 1850. (From Dr. A. Stillé.)

Annual Report of the keeper of the Kentucky Penitentiary.

Report of a Case, read before the Medical Society of East Tennessee, at the fall Session, 1850, held at Knoxville, in which the Diagnosis was Disease of the Kidney. By FRANK A. RAMSAY, M. D. Knoxville, Tenn., 1850. (From the Author.)

Fourteenth Annual Report of the Directors and Superintendent of the Vermont Asylum for the Insane. September, 1850. Rutland, 1850.

An Inquiry into the Principles and Practice of Homœopathy; an Address delivered before the Society of Inquiry, at Oberlin. B. J. DASCOMB, M. D. Elyria, Ohio. (From Dr. Horner Johnson.)

Statistics of the Amputations of the larger Limbs that have been performed at the Massachusetts General Hospital, from its establishment to January 1, 1850. By GEORGE HAYWARD, M. D., one of the Surgeons to the Hospital. Boston, 1850. (From the Author.)

An Inaugural Essay on Zoo-adyndamia, presented for the degree of Doctor of Medicine in the University of Pennsylvania. By GEORGE J. ZIEGLER, M. D. Published on the recommendation of Professor Jackson. Philadelphia, 1850. (From the Author.)

On the comparative liability of Males and Females to Insanity, and their comparative curability and mortality when Insane. By EDWARD JARVIS, M. D., of Dorchester, Mass. Utica, 1850. (From the Author.)

Code of Rules and Regulations for the government of those employed in the care of the patients of the Pennsylvania Hospital for the Insane, near Philadelphia. Second edition. Prepared and printed by authority of the Board of Managers. Philadelphia, 1850. (From Dr. Thomas S. Kirkbride.)

Lecture upon the Utility of Medical Organization: delivered before the Delaware County Medical Society, on the 26th of August, 1850. By R. K. SMITH, M. D. Published at the request of the Society.

Introductory Lecture to the course of Lectures on the Theory and Practice in the University of Pennsylvania. By Geo. B. Wood, M. D. Delivered Oct. 11th, 1850. Published by the class. Philadelphia, 1850. (From the Author.)

Lecture, introductory to the Course, on the Theory and Practice of Medicine in the Medical College of the State of South Carolina. By SAMUEL HENRY DICKSON, M. D. Charleston, 1850. (From the Author.)

Lecture, introductory to the Course, on Materia Medica and Pharmacy in the University of Pennsylvania. By JOSEPH CARSON, M. D., Professor of Materia Medica and Pharmacy. Delivered October 10th, 1850. Published by the Class. (From the Author.)

An Introductory Address to the Class of the Medical Department of Pennsylvania College. Session 1850-51. By WASHINGTON L. ATLEE, M. D. Prof. Med. Chemistry. Philadelphia, 1850. (From the Author.)

Catalogue of the Wistar or Anatomical Museum of the University of Pennsylvania. By W. E. HORNER, M. D., Professor of Anatomy. Third edition. Philadelphia, 1850. (From the Author.)

An Introductory Lecture delivered at the opening of the Kentucky School of Medicine. By SAMUEL ANNAN, M. D., Prof. of Path. and Pract. of Med. Louisville, 1850. (From the Author.)

The following Journals have been received in exchange :—

The Edinburgh Medical and Surgical Journal. October, 1850.

London Medical Gazette. September, October, November, 1850.

The British and Foreign Medico-Chirurgical Review. October, 1850.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M. D. October, 1850.

London Journal of Medicine. October, November, December, 1850.

Monthly Journal of Medical Science. Edited by Professors CHRISTISON, SYME, SIMPSON, GOODSIR, and BENNETT, and Drs. MACLAGAN and ROBERTSON. October, November, December, 1850.

Provincial Medical and Surgical Journal. Edited by Dr. W. H. RANKING and J. H. WALSH, Esq. October, November, December, 1850.

The London Medical Examiner. October, November, 1850.

The Dublin Quarterly Journal of Medical Science. November, 1850.

Zeitschrift für die gesammte Medicin, mit besonderer Rücksicht auf Hospitalpraxis und ausländische Literatur. Herausgegeben von F. W. OPPENHEIM. February, March, April, 1850.

British American Medical and Physical Journal. Edited by ARCHIBALD HALL, M. D., &c. October, 1850.

The New York Medical Gazette and Journal of Health. Edited by D. MEREDITH REESE, M. D. October, November, December, 1850.

Northern Lancet and Gazette of Legal Medicine. Edited by Drs. F. J. D'AVIGNON and H. NELSON. July, November, 1850.

Boston Medical and Surgical Journal. Edited by J. V. C. SMITH, M. D. October, November, December, 1850.

The Medical Examiner. Edited by F. G. SMITH, M. D. October, November, December, 1850.

St. Louis Medical and Surgical Journal. Edited by Drs. LINTON, MOORE, MCPHEETERS, and JOHNSON. July and August, 1850.

The New Hampshire Journal of Medicine. Edited by EDWARD H. PARKER, M. D. September, October, November, December, 1850.

Southern Medical and Surgical Journal. Edited by J. P. GARVIN, M. D. October, November, December, 1850.

The New York Register of Medicine and Pharmacy. Edited by C. D. GRISWOLD, M. D. October, November, 1850.

The Western Medico-Chirurgical Journal. Edited by Drs. SANDFORD and ARMOR. October, November, 1850.

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by WILLIAM PROCTOR, Jr., Prof. of Pharm. Oct. 1850.

Buffalo Medical Journal. Edited by AUSTIN FLINT. October, November, December, 1850.

The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica. October, 1850.

The Western Journal of Medicine and Surgery. Edited by Drs. L. P. YANDELL and T. S. BELL. October, November, 1850.

The Western Lancet and Hospital Reporter. Edited by Drs. L. M. LAWSON and G. MENDENHALL. October, November, 1850.

The Ohio Medical and Surgical Journal. Edited by S. HANBURY SMITH, M. D. Nov. 1850.

The St. Louis Probe. Edited by Drs. COONS and ATKINSON. October, 1850.

Transylvania Medical Journal. Edited by E. L. DUDLEY, M. D. August, December, 1850.

The American Journal of Science and the Arts. Conducted by Professors B. SILLIMAN, B. SILLIMAN, Jr., and JAMES D. DANA. November, 1850.

The North-Western Medical and Surgical Journal. Edited by Drs. EVANS and MEEK. November, 1850.

The American Journal of Dental Science. Edited by CHAPIN A. HARRIS, M. D., D. D. S. October, 1850.

The New Orleans Medical and Surgical Journal. Edited by A. HESTER, M. D. November, 1850.

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CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. XLII. NEW SERIES.

JANUARY, 1851.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART.	PAGE
I. On the Structure of the Mucous Membrane of the Human Stomach. By John Neill, M. D., Demonstrator of Anatomy in the University of Pennsylvania. (Read before the College of Physicians of Philadelphia.) [With a coloured plate.] - - - - -	13
II. Notes of cases of Phthisis Pulmonalis treated in the Pennsylvania Hospital; with remarks on Cod-Liver Oil, and its uses in Tubercular Disease. By James J. Levick, M. D., Resident Physician, Pennsylvania Hospital. - - - - -	21
III. Extracts from the Records of the Boston Society for Medical Improvement. By Wm. W. Morland, M. D., Secretary. - - - - -	38
IV. Subclavian Aneurism successfully treated by Ligature of the left Subclavian Artery; with an account of the appearances on dissection a year afterwards. By J. Mason Warren, M. D. [Communicated to the Boston Society for Medical Improvement.] - - - - -	53
V. Two Remarkable Cases of Abstinence. By Dr. Julius S. Taylor, of Carrollton, Montgomery Co., Ohio. (Read before the Montgomery Medical Society, November, 1850.) - - - - -	55
VI. Observations on Typhoid Fever and its Complications, as it prevails in the town and vicinity of Mount Vernon, Indiana. By W. H. Byford, M. D. - - - - -	61
VII. Cases in Surgery. By D. Gilbert, M. D. (of Gettysburg, Pa.), Prof. of Surgery in Med. Dept. of Penn. College, Philad. - - - - -	70
VIII. Remarks on the Treatment of Cholera. By Richard McSherry, M. D., U. S. Navy. - - - - -	76
IX. Poisoning by Corrosive Sublimate. By H. W. Williams, M. D. (Read before the Boston Society for Medical Observation, August 19, 1850.) - - - - -	79
X. A Case of a Tumour in the Bladder. By C. J. Clark, M. D., of Jacksonville, Alabama. - - - - -	83
XI. Cases of Puerperal Convulsions. By John P. Little, M. D., Richmond, Virginia. - - - - -	87
XII. Notes of a case of Poisoning by Arsenic. By Benjamin W. Robinson, M. D., of Fayetteville, N. C. - - - - -	91
XIII. Case of Hydrophobia. By J. Wilson, Jr., M. D. - - - - -	96
XIV. General Paralysis from Abscesses in the Cerebellum. By Samuel Chamberlaine, M. D., of Philadelphia. - - - - -	101

ART.	PAGE
XV. On the Treatment of Permanent Pseudarthrosis by an Apparatus which permits the use of the Limb and obviates the necessity of Amputation. By Henry H. Smith, M. D., Surgeon to the St. Joseph's Hospital, Philadelphia. - - - - -	106
XVI. Hydrocephalus cured by Hydriodate of Potass. By J. St. Julien Guerard, M. D., of Beaufort, S. C. - - - - -	109

REVIEWS.

XVII. The Transactions of the American Medical Association. Instituted 1847. Vol. III. Philadelphia, 1850. 8vo. pp. 499. - - - - -	111
XVIII. A Dissertation upon Dislocations and Fractures of the Clavicle and Shoulder-Joint, being the Jacksonian Prize Essay for 1846. By Thomas Callaway, F. R. C. S. Demonstrator of Anatomy to Guy's Hospital, &c. &c. &c. 8vo. pp. 178: London, 1849. - - - - -	127
XIX. Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume the Thirty-third. 8vo. pp. 360. London, 1850. - - - - -	141

BIBLIOGRAPHICAL NOTICES.

XX. Renal Affections, their Diagnosis and Pathology. By Charles Frick, M. D., Philadelphia: Lea and Blanchard, 1850, pp. 189, 12mo. - - - - -	171
XXI. The Diseases of the Breast, and their Treatment. By John Birkett, Assistant Surgeon at Guy's Hospital, &c. &c. London, 1850: pp. 264, 8vo. - - - - -	172
XXII. Mental Hygiene; or an Examination of the Intellect and Passions. Designed to show how they affect and are affected by the bodily functions, and their influence on Health and Longevity. By William Sweetser, M. D., Professor of the Theory and Practice of Medicine in Bowdoin, Castleton, and Geneva Medical Colleges, and Fellow of the American Academy of Arts and Sciences. Second edition, re-written and enlarged. 12mo. pp. 390. New York: George P. Putnam, 1850. - - - - -	176
XXIII. Household Surgery: or, Hints on Emergencies. By John F. South, one of the Surgeons to the St. Thomas's Hospital. First American from the second London edition. 12mo. pp. 280. Henry Carey Baird, Philad., 1850. - - - - -	177
XXIV. Statistics of the Amputations of large limbs that have been performed at the Massachusetts General Hospital, from its establishment to Jan. 1, 1850. By George Hayward, M. D., one of the Surgeons to the Hospital. Boston, 1850, pp. 15, 8vo. - - - - -	178
XXV. Summary of the Transactions of the College of Physicians of Philadelphia. From August 7th to October 1st, 1850, inclusive. Vol. III. No. 3, pp. 126, 8vo. - - - - -	183
XXVI. Woman; her Diseases and Remedies. A series of Letters to his Class. By Charles D. Meigs, M. D., etc. etc. Second edition, revised and enlarged. 8vo. pp. 690. Philadelphia, 1850: Lea & Blanchard. - - - - -	193
XXVII. Practical Ventilation, as applied to Public, Domestic, and Agricultural Structures, being an Elucidation of Plans and Suggestions, of easy application, for ventilating every Species of Architectural Structure, with Remarks on Heating, Construction of Fire-places, Cure of Smoky Chimneys; and an Appendix on the Ventilation of Ships, Steamboats, and Railway Carriages. By Robert Scott Burn, Engineer. London and Edinburgh, 1850. 12mo. pp. 208.	
Useful Hints on Ventilation; explanatory of its Leading Principles, and designed to facilitate their Application to all kinds of Buildings. By W. Walker, Engineer. 12mo. pp. 131. London, 1850. - - - - -	194

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE

MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

ANATOMY AND PHYSIOLOGY.

	PAGE		PAGE
1. On the Structure of the Muscular Substance of the Heart. By Remak. - - -	195	gical Uses of Peyer's Glands. By Ernest Brucke. - - -	195
2 The Terminations of the Olfactory Nerves. By Dr. Hom. -	195	4. Of Repair and the Imperfections or Limitations of Cure. By Dr. William Addison. -	196
3 On the Structure and Physiolo-			

ORGANIC CHEMISTRY.

5. On the Salts contained in Cholera Evacuations. By Dr. Guterböck. - - -	198	6. Influence of Salt Diet on the Composition of the Blood. By Poggiale. - - -	199
---	-----	---	-----

MATERIA MEDICA AND PHARMACY.

7. On the Action of Bromide of Potassium. By M. Huette. -	199	12. Preparation of Atropine by means of Chloroform. -	203
8. On the Therapeutical Employment of Coffee and Caffeine. By MM. Vanden-Corput and Hannon - - -	200	13. Cantharidal Ether, and some Vesicant Preparations of Cantharides. - - -	203
9. A cheap and simple article of Nourishment for Infants—Carrot Juice. By Dr. Gumprecht of Hamburg. - - -	201	14. Protection of Pills of Iodide of Iron from the Air. By M. Blancard. - - -	204
10. On the Therapeutic Properties of Cedron. By Dr. Cazentre. -	202	15. Neutral Citrate of Soda, a new Purgative suitable as a substitute for Saline Mineral Waters, the Citrate of Magnesia, Sulphate of Soda, of Potash, of Magnesia, &c. By M. Guichon.	204
11. Hydro-Iodic Ether. By M. Huette. - - -	203		

MEDICAL PATHOLOGY, THERAPEUTICS, AND PRACTICAL MEDICINE.

16. On the Mechanism of the Inflammatory Process. By Ernest Brucke. - - -	205	23. Nightmare caused by Excessive Elongation of the Uvula, and cured by Excision of the Part. By M. West. - - -	222
17. Treatment of Typhoid Fever. By M. Becquerel, Jr. - - -	207	24. Ozæna. By M. Max-Simon. -	222
18. Treatment of Cardiac Dropsy. By Dr. Alexander Kilgour. -	209	25. On the Diagnosis of Tape-worm, from the character of the Nervous Symptoms induced by its presence. By M. Legendre.	223
19. Valvular Diseases of the Heart. By Robert Hunter Semple, M.D.	213	26. Wawruch on the Causes and Symptoms of Tape-worm. -	224
20. Epidemic Cholera. By Dr. P. H. Williams, - - -	217	27. Cod-liver Oil in Phthisis. By M. Duclos. - - -	225
21. Epidemic Mumps at Geneva and Montpellier. By MM. Rilliet and Ressiguier. - - -	219	28. Inunction in Scarlatina. By Dr. Ebert. - - -	225
22. The Bronchocele of New-born Infants. By Dr. Betz. - - -	221		

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

	PAGE		PAGE
29. History of a successful case of Ovariectomy. By W. E. Duffin. - - - -	226	positions of arteries in the ordinary operations for Femoral and Inguinal Hernia. By P. Redfern, M. D. - - -	239
30. Operations for Ovarian Disease. By Frederic Bird. - -	234	37. Aneurism of the Femoral Artery, Ligature of the External Iliac. By Henry Smith, Esq. -	239
31. On the Treatment of Sprains of the Ankle. By M. Baudens. -	235	38. Ligature of the Femoral Artery for Popliteal Aneurism. By James Drummond. - -	239
32. Dislocation of the Scaphoid Bone of the Foot. By Dr. Walker. - - - -	237	39. On the Employment of Forced Flexion for arresting Hemorrhage in Wounds of the Palmar Arch. By M. E. Durwell. -	239
33. Ununited Fracture of the Tibia of twenty-four years' standing, successfully treated. By R. W. Tamplin. - - - -	237	40. On Hospital Gangrene. By Prof. Restelli. - - - -	240
34. On Primary and Secondary Amputation. By Dr. Restelli -	238	41. On Dry Gangrene. By Dr. De Martini. - - - -	241
35. Surgical Operations, in reference to the Employment of Chloroform. By M. Boyer. - - -	238	42. On Fungous Tumour of the Rectum in Children, attended with Bloody Discharges. By M. Leclayse. - - - -	242
36. Origin of the Epigastric and Obturator Arteries by a common trunk from the Internal Iliac; with an inquiry into the amount of danger occasioned by various		43. Gonorrhœa treated with Acetate of Potash. By Mr. Hilton. -	242

MIDWIFERY.

44. On the Causes of the Non-success of the Cæsarian Operation. By Dr. Roubaix. - -	243	tion. By M. Coste. - - -	247
45. Cæsarian Operation. By M. Nimmo, Esq. - - - -	245	49. Examination of the Genital Organs of a young Woman who was assassinated during Menstruation. By M. Jauzer. -	248
46. Sudden death seven hours after delivery — Air found in the Heart. By Samuel Berry, Esq. -	247	50. A new Japanese remedy for Sterility. By E. Williams, M.D. -	249
47. On a Stethoscopic Sign of the Detachment of the Placenta. By M. Caillault. - - -	247	51. Drs. Barnes and Sachs on Anæsthesia in Midwifery. -	249
48. Researches on Human Gestation. By M. Coste. - - -	247	52. Displacement of the Ovary. By Edward Rigby, M. D. - -	255

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

53. Child born in the beginning of the sixth month, and reared. By Dr. W. T. T. Barker. - -	257	Dr. Aschendorf. - - -	257
54. Death from Chloroform. By		55. Poisoning with Dulcamara. By Dr. Plaetschke. - - -	257

MISCELLANEOUS.

56. On the Use of Lead in the Manufacture of Sugar. By Dr.		Redwood. - - - -	258
		Statistics of Poisoning. - -	258

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

	PAGE		PAGE
Relation of the Dumb-Bell Crystals to Uric Acid and Oxalate of Lime. By Charles Frick, M. D. - - - -	259	By George W. Patterson, M. D. Abnormal Relation with Inversion of the Clitoris and Urethra. By William D. Kelley, M. D. -	260 261
Iritis complicated with Amaurosis.			

DOMESTIC SUMMARY.

Case of Poisoning by Bromine. By Dr. Sayre. - - - -	262	Absence of Uterus. By Dr. G. S. Crawford. - - - -	268
History of the Epidemic Dengue, as it prevailed in Charleston in the summer of 1850. By S. H. Dickson, M. D. - - - -	263	Popliteal Aneurism—Ligature of the Femoral Artery, Cure. By Charles A. Pope. - - - -	268
Gangrenopsis. By Prof. Dugas. -	267	Operation for Removal of the Ovarian Tumour, by large Abdominal Section. By Prof. Alden March. - - - -	268
Treatment of Rubeola by Inunction. By Dr. John Evans. -	267	American Medical Association. -	269
Hydrangea Arborescens in Lithiasis. By Dr. E. W. Butler. -	268	Demonstrative Midwifery. - -	270

THE
AMERICAN JOURNAL
OF THE MEDICAL SCIENCES
FOR JANUARY 1851.

ART. I.—*On the Structure of the Mucous Membrane of the Human Stomach.*

By JOHN NEILL, M. D., Demonstrator of Anatomy in the University of Pennsylvania. (Read before the College of Physicians of Philadelphia.)
[With a coloured plate.]

It is with some hesitation that we present before this College a paper containing even an intimation that anything new connected with so well studied a structure as that of the human stomach is yet to be observed or described.

Neither are we yet prepared to make the assertion that more recent and protracted examinations have brought to light any specific elementary formation not noticed before, in some disconnected way, and allied with much that is irrelevant and imaginary.

By the aid of microscopic and minute injections, we have been led to the conviction that, as a whole, the internal surface of the stomach has not been fully represented in any description or diagram. Notwithstanding all that older anatomists have written, shall we not be sustained in the statement that their views concerning this elaborate and complicated structure are confused and contradictory? And although modern authorities are more uniform, may not their uniformity be the result of the adoption of a common error?

We should state that it is not the epithelial, but the true surface of the mucous membrane of the stomach to which we wish to call attention, and the facts we shall present can be observed by any one in the preparations upon the table.

The surface of the mucous membrane presents different appearances in different portions of the stomach; this fact not having been sufficiently appreciated by observers, we consider as one of the sources of error in the ordinary descriptions of this organ. By far the larger portion exhibits various modifications of the honeycomb structure, the cells are large and polygonal in some parts,

in others, they are smaller, deeper, and rounder; the ridges between these cells are formed of one or more convoluted capillaries, and this arrangement of capillaries is particularly evident in the rugæ. (See Fig. I.) The walls of these cells or pockets are formed of a network of capillaries, which subdivides each cell into smaller ones; these cells are what are ordinarily called the orifices of gastric glands, and the subdivision in the bottom of each cell corresponds with the described orifices of tubuli. In the antrum pylori, the structure is modified, the ridges between the cells become larger, more elevated, (See Fig. II.), and as we approach the pyloric orifice, *conical villi* make their appearance; these villi are more numerous and larger towards the pyloric valve, so that fewer of the angular or polygonal cells are visible in their interstices; they are not so large as the villi of the small intestine, but in other respects their external appearances are precisely similar. (See Fig. III.) When well injected, they seem to be composed of capillaries, closely united by a basement membrane, and forming a pyramidal projection.

There may be said to be three different appearances presented by the microscopic examination of the injected capillaries of the mucous membrane of the stomach when deprived of its epithelium. First. The convexity of a large ruga will have a comparatively smooth and even appearance formed by convoluted and intertwining capillaries. Second. Any other portion excepting the antrum will exhibit cells or alveoli of different sizes and shapes, separated by ridges of various thicknesses, and these ridges are composed of capillaries arranged in the same manner as in the rugæ. Third. In the antrum pylori there are *conical villi*, and cells exist in the interstices and at their bases.

That the main point which we wish to prove may be understood in a few words, we would simply state that we consider the capillaries arranged in the form of "ridges, cells, and villi." The question may now arise whether this description in any manner deviates from those ordinarily given in the standard works of the day? We consider that it does, particularly with reference to the villi, the existence of which, in the stomach, we wish fully to establish by description and demonstration. It might be asked whether the term *villous* has not constantly been used with reference to the mucous membrane of the stomach? Unquestionably it has, though in a vague and loose way, as indicating a smooth, velvety surface; but not as implying a vascular, papillary projection to which the term *villus* is applied in the intestine.

To corroborate the statement, that it is generally believed that villi do not exist in the stomach, we have only to refer to recent anatomical and physiological writers on the subject. Kirkes and Paget* teach us not only that there are

* "Presents a peculiar honeycomb appearance produced by shallow polygonal depressions or cells. They are separated by highly elevated ridges, which sometimes, especially in *morbid states* of the stomach, bear minute narrow vascular processes, *that look like villi*, and have given rise to the *erroneous* supposition that the stomach has absorbing villi like those of the intestine. In the bottom of the cells are minute openings, &c., which are the orifices of perpendicular glands."—p. 165.

no villi in a healthy stomach, but that the cellular and honeycomb appearance characterizes the whole of its mucous membrane, and that the appearance is *uniform*. Neither Wilson nor Todd and Bowman speak of villi in the stomach. Carpenter* refers to "pointed processes that have been *mistaken by some anatomists* for villi."

Hassall has neither drawing nor description of gastric villi in his *Microscopic Anatomy*.

Horner† says "that none exist in the stomach or colon."

Quain and Sharpey‡ state "that these pointed processes may be compared to rudimentary villi, the perfect form of which only exists in the small intestine."

Harrison,§ of the Dublin Dissector, denies the existence of true villi.

Hodgkin|| seems to be ignorant of this structure in the stomach.

Now these authorities are sufficiently numerous and authoritative to convince us that although the term *villous* has been used with reference to the stomach, yet the authors just quoted do not believe that *villi* exist in the stomach.

On the contrary, a number of other writers say that villi *do exist* in the

* "These pits are more or less circular in form, and are separated from one another by partition—like elevations of the membrane which vary in depth; and sometimes even by pointed processes *that have been mistaken by some anatomists for villi*."—p. 659.

† "The mucous coat of the alimentary canal in a healthy state, and successfully injected, appears to consist almost entirely of a cribriform intertexture of veins." "In the whole length of the intestine there is, however, every variety of shape of villi, from oblong, curved and serpentine ridges, to the laterally flattened cone standing on its base, &c. Conformably to this definition of villi, none exist either in the stomach or colon."—Vol. ii. p. 54.

‡ "It is seen to be marked throughout, but more plainly towards the pyloric extremity, with little depressions or cells, named *alveoli*, which have a polygonal form." "The margins of these alveoli are elevated into pointed processes, which may be compared to *rudimentary villi*; the perfect form of these appendages only existing in the small intestine, and making their appearance in the duodenum."—Part III. p. 1025.

§ "Numerous follicular papillæ, but not true villi, project, and leave between them small depressions or pits studded with minute holes; these pits are more or less circular, and are bounded and separated by the follicular elevations; they are more distinct towards the pyloric portion of the stomach; four or five foramina are seen in each: these are the orifices of the small glands and ducts that elaborate the gastric fluid, the mucous being probably furnished by the follicles."—Vol. i. p. 244.

|| "In fact, the surface of the mucous membrane of the stomach is generally described as villous: and even Billard appears to agree with this description of it. I have at least a doubt respecting the accuracy of this statement. To me the surface of the stomach, when viewed under the circumstances which I have mentioned, appears to the naked eye by no means perfectly smooth, but of an indeterminate character, very difficult to describe." "Whilst in the *serous* membranes, the assistance of a powerful microscope enables us to distinguish delicate fibres intimately interlaced, when the *mucous* membrane of the stomach is thus examined, *I can only observe an amorphous semi-transparent* mass in which no structural texture can be distinguished."—Lect. xix. p. 270.

stomach, and give descriptions of them, though none have made drawings of them but Berres,* whose magnificent work has fallen into my hands since the artist has given the accompanying representations. With the exception of Berres, we believe no one has had the knowledge of this structure, although Bèclard† says “the villosities are nowhere more numerous than in the pyloric half of the stomach and small intestine;” and again, in a succeeding paragraph, says, “they are shorter and *less numerous in the stomach and large intestine*,” and in another denies the vascularity of them. If Bèclard’s injections could not exhibit the vascularity of these villi, it is hardly probable that he could have any accurate idea of the structure, for it is only by successfully executed injections that the true form of the villi can be determined. An opinion founded on no better data can hardly be more than an hypothesis, or an inference from the nature of the surface in other portions of the alimentary canal.

Such also may be considered the value of Bichat’s‡ statement upon this point. He *reasons* that they exist there, because they do in other parts; his

* Anat. Microsc. Corp. Humani. Auct. Dr. Josepho Berres, Prof., &c. Vienna, 1837.

† “The villosities whose existence is very general, but which are nowhere more numerous, larger, or more apparent than in the pyloric half of the stomach, and in the small intestines, and especially in the commencement of that intestine, are eminences still finer than the papillæ.”

“These villosities may with propriety be called the *radicals* of animals, are small foliaceous prolongations of the internal membrane,” &c. “Were first described by Fallopius and Azelli, and have been figured by Helvetius, Lieberkuhn, Hedwig, Rudolphi, Meckel, Buerger, and others, especially in the small intestine, being shorter and less numerous in the stomach and large intestines.”

“Those of the pyloric half of the stomach and duodenum are broader than long, and constitute a small lamina.” “There is not perceived the vascular texture which has been described as belonging to them.”—*Elem. Gen. Anat.*, Bèclard, translated by Knox, 1830.

‡ The papilla of this system cannot be called in question at its origin, where it dips into the cavities, in the commencement even of these cavities, as upon the tongue, the palate, the internal part of the alæ of the nose, upon the glans penis, in the fossa navicularis, within the lips, &c. Inspection is sufficient to demonstrate them there. But it is asked, if the papilla exist also in the deep-seated parts of this system. Analogy indicates it, since the sensibility is as great there as at their origin, though with varieties that we shall point out; but inspection proves it in a manner not less certain. I think the villi with which we everywhere see them covered are nothing but these papillæ. This manner of regarding them by explaining their existence generally observed upon all the mucous surfaces, appears to me to be much more conformable to the plan of nature, than to suppose them in each place with different and often opposite functions. Besides, it is difficult to decide the question by ocular observation. The delicacy of these elongations conceals their structure, even from our microscopical instruments—agents from which anatomy and physiology do not appear to me to have derived much assistance, because when we see obscurely, each sees in his own way and according to his own wishes. It is then the observation of vital properties that should especially guide us; now it is evident to judge by them, that the villi have the nature I have attributed to them.”—*Bichat, Hayward’s Translation*, 1822.

generalizations lead him to assert the existence of structures we fear he had never seen. He says "analogy indicates it," but "it is difficult to decide the question by ocular demonstration."

Billard, in his work on "Mucous Membranes," speaks of the stomach as possessing villi, and says, "they exist *generally* over its surface" (with which we cannot agree), although he describes them as "more numerous towards the pylorus," and that "in the healthy stomach the naked eye perceives them but indistinctly."

Huschke* seems to have appreciated the labors of Berres on this point, and admits that the pyloric portion contains villi: and Krause also speaks of "villous folds."

We thus see that even modern writers do not agree; and if this diversity of opinion exists at the present time amid the advantages which we possess, we should not be surprised at the conflicting testimony of those of older times.

Some expressions in Haller† might lead us to suppose that he had very clear evidence of the existence of villi, which he describes as "projecting into the cavity of the stomach;" he speaks also of "the inhaling veins opening in the pendulous villi."

Ruysch‡ gives a drawing from one of his minute injections, which exhibits

* Mais les cloisons interposées entre les glandes tubuleuses méritent de fixer l'attention. Sur les dentelures qui servent de limite si tranchée entre l'épithélium de l'œsophage et le commencement de l'estomac, il-y-a, suivant Berres, des papilles longues de 1-17 à 1-18 de ligne, sur 1-64 d'épaisseur, dans chacune desquelles pénètre une anse vasculaire de 1-139 de ligne. Ces papilles servent peut être à procurer une plus grande sensibilité aux points où elles existent. Dans le reste de l'estomac, les parois intermédiaires entre les orifices des glandes ne s'élèvent pas d'une manière notable, et l'estomac n'a point, par conséquent, des villosités proprement dites, quoique sa membrane muqueuse fasse le passage, par son aspect tomenteux, à celles qu'on nomme villeuses. Mais les choses changent lorsqu'on approche du pylore. Ici, non seulement le membrane muqueuse devient plus épaisse, mais encore sa surface acquiert rapidement une tout autre apparence, qui mène à la formation des villosités de duodénum. Voici comment j'ai trouvé la métamorphose. Les orifices des glandes tubuleuses s'élargissent rapidement, et leurs intervalles commencent à se soulérer, deviennent par là mobiles et flottants, et acquièrent des bords en crête de coq, c'est-à-dire pourvus de petites points à trois dents. Pendant que ces bords s'élèvent ainsi en manière de plis ou de lames que Krause nomme *plicæ villosæ*, et auxquels il assigne 1-28 à 1-19 de ligne de hauteur, sur 1-56 à 1-28 de large, le fond des glandules tubuleuses se rapproche aussi davantage de la surface, et leur cavité tout entière est alors devenue l'intervalle entre les villosités lamelleuses. D'abord leurs parois intermédiaires sont encore tubuleuses; mais quand l'ouverture des glandes s'agrandit, elles ne tardent pas à se recourber irrégulièrement sous des formes diverses, en zig-zag, en rond, en spirale, continuent d'abord de tenir les unes aux autres par des saillies plus ou moins prononcées, et finissent par perdre entièrement ces moyens d'union; de sorte qu'alors les glandules tubuleuses se continuent les unes avec les autres à la surface, et ressemblent plus à un labyrinthe qu'à un rayon de miel ou à un réseau.—*Encyclop. Anat. Traité de Splanchnologie*, par E. Huschke. Paris, 1845.

† Haller's Physiology, vol. ii. p. 161. Lond. 1754.

‡ "Quando enim ventriculi arterias cera replevi rubrâ: posteaque in liquore idoneo ita

the surface of the stomach as consisting of regularly-formed pockets or cells. He speaks also of villi, but nevertheless confesses that his view of this arrangement was only particularly satisfactory in sheep. If he had satisfactorily injected the villi of the stomach, is it not probable that he would have given us a drawing of this structure in his work?

Fordyce says "that as far as I can judge, it seems to be nothing but cellular membrane. When the surface was moderately moist, there seemed to be a number of thin fine membranes crossing each other, so as to form a number of angular cells."

Hewson states that the whole surface of the intestinal tube is covered with villousities, but admits that in the large intestine these bodies are so short, that the surface appears smooth to the naked eye, while no true villi are detected by the microscope; only the partitions between the cells resemble villi in their structure. In the stomach a nearly identical appearance is found. "At the upper part of this organ, the villous coat appears in a microscope like a honeycomb, or like the second stomach of ruminating animals in miniature; that is, full of small cells, which have thin membranous partitions. Towards the pylorus these partitions are lengthened, so as to approach to the shape of the villi in the jejunum."*

That these opinions should have but little weight with writers and teachers at the present day, and that they should be quoted merely as elucidating the history or the literature of the subject, ought not to surprise us, when we learn that their descriptions were generally based upon observations made with the naked eye, or with instruments in which the observers had but little confidence; for both Fordyce and Bichat, although they used microscopes, expressed themselves as deriving no advantage from them. Neither are we disappointed at the want of accuracy in their descriptions, when we reflect that their comparisons were derived in a great measure from the inspection of inferior animals, and that the meaning attached to such terms as cells, alveoli, crypts, pockets, lacuna, glands, villi, papillæ, &c., is conventional, and varies

prius præparatas partes hæc macero, exterior tum superficiem interiorem ventriculi et intestini jejuni tunicâ quâ quadam papillosa vestitam esse. Fateri tamen debeo, haud ita evidenter quidem in stomacho humano has papillas apparere, ut quidem in ovillo: quemadmodum hæc in figurâ expressi. Inde itaque et tanto facilius inducimur credere, et in homine ita obtinere, quum obscurius quidem similitudo accedens in homine observetur."—*Ruysch, Dec. Tert.*, p. 34 and 35, 1737.

"Voco autem hanc intestinorum tunicam villo-papillosam, quia animadverti villosam istam superficiem penitus simul esse papillosam, quemadmodum se habent interiora nostrarum Genarum in suo integumento, ut et labia oris, œsophagus, ventriculus, omniaque intestina, quum sit in his omnibus ejusdem apparatus continuata productio. Verum quidem est, in unoquoque non æque clarum id apparere; quum in Labiis genis internis, et in intestinis malorum hominum tunica hæc papillas hæc nimis manifestas non possideat, attamen in aliis satis conspicua datur."—*Ruysch, Dec. Secunda*, p. 25 and 26.

* Dr. Sprott Boyd's article on the Structure of the Mucous Membrane of the Stomach. *Edin. Med. and Surg. Journal*, 1836.

with the different periods at which the authors above referred to have made public the results of their observations.

We ought next to inquire what is taught by the principal physiological writers of the day upon this subject, and examine the evidence upon which they base their theories, and see how far the structure they demonstrate corresponds with what we may conceive to exist.

The investigations most frequently referred to are those of Sir E. Home and Dr. Sprott Boyd, although the diagrams of Ruysch, Horner, Todd and Bowman, and Berres are far more in accordance with nature. We refer now merely to the mucous membrane, and not to its epithelial investment, which has received so much attention from Wassman, Henle, Wagner, Hassall, and others.

Sir E. Home says: "The structure upon the upper arch of the stomach which when magnified by a common lens had the appearance of glands, is shown by Mr. Bauer to be made up of cells in the form of a honeycomb; this honeycomb structure consists of cells of the greatest depth in this particular situation, but over the whole surface of the cardiac portion of the stomach the appearance is so faint as to require a great magnifying power to render it visible. In the pyloric portion the cells in general have the same appearance, but there are small clusters, the sides of which rise above the surface, giving the appearance of foliated membranes."

And Dr. Sprott Boyd agrees with him, for he says "the appearance of those cells, throughout the cardiac portion of the stomach, corresponds to the representation given of them by Sir E. Home. When the mucous membrane is extended, they appear tolerably regular both in form and size, varying from the one-two hundredth to one-three hundred and fiftieth of an inch in diameter, being smaller in the young man than in the adult subject. Towards the pylorus, the mucous membrane, which is thin throughout the great cul-de-sac of the stomach, becomes considerably thicker, the dimensions of the cells are increased, and an appearance somewhat resembling that described by Sir E. Home is perceptible. He mentions the patches distinguished by the foliated membranes as existing particularly towards the pylorus. They may be found, however, in the cardiac portion of the stomach likewise; perhaps not actually at the great extremity; but certainly opposite the termination of the œsophagus. In the engraving given by Home of these patches, the wall of each cell is represented as rising above the general surface of the stomach, and being cleft into a number, ten or a dozen, of rounded segments, which form a complete fringe about the mouth of the cell. These projections of the mucous membrane are, so far as I have been able to observe, much less numerous. There is no regular fringe, but here and there a prolongation of membrane, resembling an ordinary villus of the intestine, rises from a partition between two cells. These bodies from their small size are not easily distinguished; they give to the surface a more flocculent and velvety appearance than is presented by other parts of the stomach. The cells near the pylorus are in some cases about one one-hun-

dredth of an inch in diameter, and on examining them on a dark ground, and with the aid of a reflector and a magnifier of a quarter of an inch focus, their interior is pretty distinctly seen presenting an appearance similar to what I have presently to describe as existing in the stomach of the pig, where it is more clearly visible and more easily examined. The floor of each cell appears perforated by numerous circular openings, as if a number of tubes opened on it; and on making a vertical section of the mucous membrane, it is seen to be composed of striæ or fibres running perpendicularly from the free surface of the membrane to the cellular coat beneath."

The diagram of Dr. Boyd is the one which is usually copied into the text books of the day. Had it been made from an injected preparation, we think the nature of "cells and the circular openings perforating their floor" would have been more distinctly demonstrated. The circular openings which he considers to be the orifices of *tubule*, which he describes partly from observation, and partly from analogy in the pig's stomach, we consider to be simply the subdivisions of the cells into smaller and deeper ones by the arrangement of the blood-vessels. We have no disposition to make any innovations upon the terms "tubuli," "gastric tubes," "pyloric tubes," &c., but merely wish to show that their parietes are formed of vessels, and that they are elongated cells or alveoli.

It will be a question of great interest to determine the uses of the *Gastric Villi*. Their form and structure, and their resemblance to the intestinal villi would naturally lead us to associate them with the function of absorption, although some, perhaps, who still consider the intestinal villi to be tactile, would wish to ascribe the same character to those of the stomach. We would not imply by the application of this term *villi* that their uses are precisely similar to the villi of the intestine, that is, that they participate in the chyloferous absorption, or that their lymphatics should be called lacteals; on the contrary, we would believe that the fluid which they absorb is very different from that which has to be subjected to the influence of the bile and pancreatic juice previously to its removal from the intestine; for we have neither mesentery attached to the stomach, nor mesenteric glands for lacteals to pass through, did we suppose them originating in the villi of the pylorus. But is there no other absorption from the stomach than that of watery fluids by endosmotic action directly through the parietes of the blood-vessels? May not these villi be the special apparatus for the absorption of the solution of the albuminose compounds? Is there no nutrition except through the villi of the intestine?

EXPLANATION OF THE PLATE.

Fig. 1 exhibits the gastric cells and capillary ridges.

Fig. 2 exhibits the cells becoming deeper and the ridges becoming more elevated and pointed.

Fig. 3 exhibits the *Gastric villi*, together with gastric cells.

Fig. I.

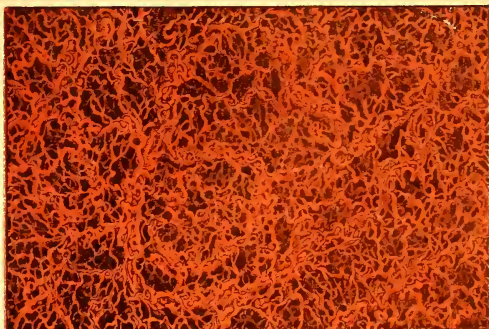


Fig. II.

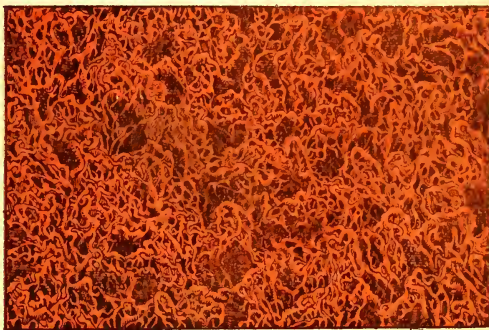
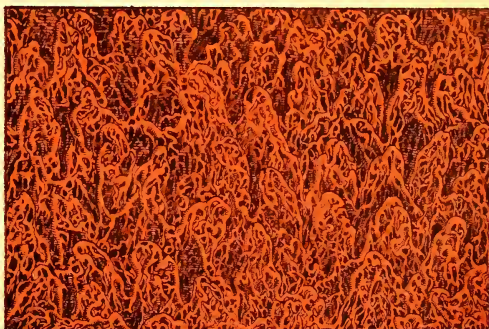


Fig. III.



ART. II.—*Notes of cases of Phthisis Pulmonalis treated in the Pennsylvania Hospital; with remarks on Cod-Liver Oil and its uses in Tubercular Disease.* By JAMES J. LEVICK, M. D., Resident Physician, Pennsylvania Hospital.

DURING the winter, spring, and the early part of the summer of this year, the medical wards of the Pennsylvania Hospital, under the care successively of Drs. Wood, Pepper and Gerhard, attending physicians, have presented a large number of interesting cases of disease. An opportunity has thus been afforded the writer, as resident physician, of noting the progress and results of these cases. From these notes, the following reports have been taken, and are now offered for publication in the hope that they may do their part towards determining the remedial value of cod-liver oil.

Although this motive has led to their publication, it was but a subordinate consideration at the time they were recorded; but to modify the history of the patient, the notice of the symptoms, and the results of the inspections, so as to have this always the prominent object, would require more time than the writer at present has at his disposal; and the reports have therefore been given almost exactly as they were made at the time, after the close of each day's duties in the wards. Where the previous history of the case has been given, it has been in very nearly the words of the patient himself, the person and tense having alone, for the most part, been changed.

CASE I.—A German, surgical instrument maker, æt. 47, dark hair, of medium height, was admitted into the hospital November 7, 1849, for chronic rheumatism. The patient was evidently of a scrofulous diathesis; had on each wrist a bursal tumour filled with cheesy substance. Had cough, with puriform expectoration.

Upon examining his chest, a small cavity was detected at the summit of the left lung. He was at once placed on the use of cod-liver oil, tablespoonful thrice daily; and iodide of potassium gr. xv daily—to have No. 4* diet, and milk and an egg in the morning. He remained in the house for sixteen weeks, and was then discharged, having gained several pounds in weight, and having a very decided diminution of his cough—the physical signs undergoing little or no change.

CASE II.—A seaman, æt. 20, with light hair, a little below the medium height, was admitted September 22, 1849, much emaciated, with cough, copious

* The following is the diet table of the hospital numerically arranged:—

No. 1. Barley water, gruel, arrowroot, sago, tapioca, rice water.

No. 2. Gruel, tea, bread, rice, molasses, mush, vegetables.

No. 3. Bread, tea, rice, molasses, mush, vegetables, soup.

No. 4. Bread, tea, chocolate, vegetables, soup, meat.

purulent expectoration, and with the physical signs of a cavity at the summit of each lung. With this patient there was great intolerance of cod-liver oil, so that after attempting its use for several days it was omitted. He resumed the oil November 16, and continued to take it until his death. After five weeks' use of the remedy there appeared to be an arrest in the progress of the disease. There was, however, no permanent improvement, and the man died four months after his admission, and after an illness of two years.

An inspection showed the existence of a cavity larger than a walnut at the summit of each lung; and numerous larger and smaller tubercles in the stage of softening scattered through the lungs.

CASE III.—A seaman, æt. 21, admitted October 13, 1849. Had had cough for eight weeks—before this time had had pleurisy of the left side coming on after exposure to cold and wet. Had suffered for a long time from pain in the bowels and from diarrhœa. He was at once placed on the use of cod-liver oil $\text{f}\overline{\text{z}}\text{ss}$ ter die, and liq. morph. sulphat. $\text{f}\overline{\text{z}}\text{i}$ ter die.

I found him in the early part of December considerably emaciated, harassed by cough, and expectorating nearly ten ounces of pus daily; with cavernous respiration, pectoriloquy and gurgling below the left clavicle, and gurgling below the right clavicle. In addition to the pulmonary affection, there was obstinate abdominal pain and diarrhœa.

Notwithstanding this condition of his bowels, the patient increased in weight, his appetite improved, and he was able to walk about the house, feeling better than at the time of his admission into the hospital. Thinking it possible that the diarrhœa might be aggravated by the use of the oil, Dr. Wood directed its omission for a short time. For a day or two following, the diarrhœa diminished; it soon returned with its former frequency; the use of the oil was resumed, but the patient had acquired a dislike to it, and it was taken with difficulty and irregularly. The cough, expectoration and diarrhœa increased, and the man died February 28, 1850.

On inspection, there was found considerable serous effusion in the left pleura; a vomica at the summit of each lung—that of the right side (the larger of the two) about the size of a hen's egg, and traversed by a band enclosing a vessel through which a fine probe was readily passed. The mesenteric glands were found tubercular; numerous small tubercles dotted the peritoneal surface of the intestine, the mucous membrane of which was found extensively ulcerated.

CASE IV.—A shoemaker, æt. 24, born in Ireland, rather above the medium height, was admitted September 8, 1849. Had been well until the first of May preceding—was at that time on a frolic and took cold. From this time had had a cough, which had continued steadily to increase. Had rapidly lost flesh, but had had no hæmoptysis.

At the time of his admission the patient was very feeble, much emaciated, unable to leave his bed; with frequent cough, rigors and hectic. Percussion

dull at the summit of left lung, clear elsewhere; cavernous respiration and subcrepitant râle distinctly heard below the left clavicle. On the 10th, was ordered cod-liver oil, tablespoonful thrice daily—with occasional anodynes; No. 3 diet; increased two days later to No. 4.

30th. Had a slight hemorrhage. R.—Acid sulph. aromat. gtt. x t. d.; a small blister to be applied below the clavicle. These symptoms steadily continued during the first six weeks of his residence here. At the end of this time, an improvement of his appetite and with it an increase of strength began to be noticed; this was followed by a gain of flesh. Two weeks later he was able to leave his bed, though still coughing and expectorating considerably.

A gradual though somewhat variable improvement followed. He remained in the hospital about six months, steadily using the oil in the dose before mentioned. At the expiration of this time, an entire amelioration of his symptoms had taken place. He was discharged March 15, 1850, being at the time the stoutest patient in the medical ward, having scarcely any cough, no expectoration, no hectic, with his appetite and strength as good as they ever were. The physical signs at this time were obscure dulness below the left clavicle, with rude respiration at the summit of the left lung.

CASE V.—Of this case I have but very imperfect notes. He was a seaman, aged forty years, who entered the hospital Sept. 10th, 1849, far advanced in consumption, with pectoriloquy, gurgling, and cavernous respiration below each clavicle. He was at once placed on the use of cod-liver oil, tablespoonful thrice daily, and a teaspoonful solution of sulphate of morphia, *pro re nata*. He continued the use of these remedies until he was discharged from the house. After a time there appeared to be a very slight improvement in his condition, but this, if real, continued for but a very limited period. He was removed at his own request, February 20th, 1850, with but little hope of surviving many weeks.

CASE VI.—A seaman, aged twenty-seven years, born in Prince Edward's Island, dark hair, with numerous scrofulous abscesses of neck and throat, was admitted December 21st, 1849. Five years before had a cough which lasted for two months, and was the result of exposure on the coast of England after a wreck. With this exception had had good health until March 1st, 1849. At that time had swelling of the glands of the neck and under the jaw. This continued to increase for some months, and then disappeared. Two months later reappeared, and with a cough had continued since. Was treated in the Rio Janeiro Hospital for these abscesses, remaining there for five weeks, during which time he had an attack of erysipelas; was very feeble when he left. Had never had hæmoptysis. Did not expectorate to any amount until five months before his admission, when (to use his own words) something like a boil broke in his chest, and a most abundant discharge of matter followed. Was relieved by this. Has had little or no nausea. Bowels pretty regular.

At the time of his admission was extremely ill. Countenance anxious, very feeble and emaciated, harassed by cough, and expectorating twelve ounces of pus daily. Auscultation loud; cavernous respiration, pectoriloquy and mucous gurgling after coughing, at the summit of the left lung. Cavernous respiration, slight gurgling and imperfect pectoriloquy below right clavicle. On the 28th, he was ordered cod-liver oil (with a bottle of porter daily), in the usual dose; an anodyne at night and *pro re nata*, No. 4 diet and a mutton chop daily.

January 8th. R. Infus. prun. Virginian. fʒij t. d., and to have milk and crackers.—*29th.* Complains of great nausea and inability to take the oil; to be omitted for a few days.

February 3d. Resumed the use of the oil.—*22d.* Had a slight attack of diarrhœa, checked by an opiate.

At this time a very marked improvement in the appearance of the patient had taken place. He had lost his anxious expression of countenance, several of the scrofulous abscesses had healed, and there had been a very decided increase of his weight and strength; his appetite was good, and he was seldom in bed.

March 31st. The tonsils very much enlarged, almost preventing deglutition. To be touched with solution of nitrate of silver ʒss to ʒj. *April 2d.* Throat much better. *10th.* Very great quantity of puriform expectoration, amounting to nearly a pint. *28th.* Had an attack of hæmoptysis. To correct this, R. Acid. sulph. gtt. x t. d.

May 14th. On a close examination of his chest to-day, I find the physical signs below the clavicle to be very much as at the time of the man's admission. At the lower part of the right thorax anteriorly there is complete flatness on percussion extending above the sixth rib, with great prominence of this part of the chest. Posteriorly on the same side, a little below the inferior angle of the scapula, there is loud amphoric respiration.

July 4th. Has complained of pain at the lower part of his right side, relieved by a blister.

Notwithstanding these evidences of an increase of the disease of the lungs, the improvement in his general health, as shown by increased weight and strength, continued, and the patient, with the infatuation of his disease, believed himself to be fast getting well. *20th.* Had a bad attack of diarrhœa, checked by anodyne enemata. *29th.* Diarrhœa returned; considerable discharge of blood from the bowels. R. Opii pulv. gr. ss q. q. h. Has much nausea and vomiting with total inability to retain the oil. Pulse very feeble. R. Vini rubr. fʒvi daily. This bowel complaint continued with increased violence, resisting all treatment, the number of discharges amounting to sixty daily. Under the exhausting effect of these the patient rapidly sank, and died August 27, 1850. The inspection was made twenty-four hours after death, with the following results:—

Exterior.—Emaciation moderate; numerous cicatrices of old abscesses on neck and throat.

Thorax.—Slight adhesions of left pleura; adherent in the whole extent of right side. Third rib carious, and pieces of it torn away in removing the lung. A large cavity found at the summit of each lung. A little below and exterior to the root of the right lung there was a cavity larger than a hen's egg; a smaller one was found a short distance below this. A small cavity was found near the centre of the left lung; numerous larger and smaller tubercles diffused through each lung.

Abdomen.—The liver was enormously enlarged, to nearly three times its natural size. The gall-bladder adherent to the intestine. A larger and smaller spleen. Several large ulcerations found in the great intestine. Tubercular deposits in Peyer's glands. The mesenteric glands much diseased, and containing numerous tubercular deposits. The inner surface of the sigmoid flexure appeared to be a continuous ulcer. No further examination was made.

CASE VII.—A wool-sorter, æt. thirty-two, born in Wales, with light hair and fair complexion, was admitted February 9th, 1850. Had been in good health until the preceding September. Had been exposed to the damp and cold while working in a new building, the windows being unglazed. First had cough, followed by chills and sweats; had had no hæmoptysis. At the time of his admission had dulness at the summit of right lung, loud bronchial respiration below the right clavicle and slight subcrepitant râle below the left; much emaciated, great anxiety of countenance, and expectorating about four ounces of muco-purulent matter daily; bowels constipated. 10th. Ordered of solution of sulphate of morphia $\text{f}\text{ʒj}$ ter die; cod-liver oil $\text{f}\text{ʒss}$ thrice daily; to take an occasional cathartic. Diet No. 3, to be gradually increased.

March 13th. Had been pretty comfortable during the last three weeks. Thinks he took cold two days ago, since which time he has had severe pain in the lower part of his right lung. For this was dry-cupped. To-day has purulent expectoration (about ten ounces), which, he says, seems to come from the lower part of his lungs. On a close examination of his chest to day, I find, besides the signs noted before, amphoric respiration with metallic tinkling two inches below the left nipple. 17th. Pulse frequent and feeble, much dyspnœa. R. Vini alb. $\text{f}\text{ʒvi}$ daily.

This debility and dyspnœa continued for several days; added to which were the continuance of copious purulent expectoration and increasing evidences of pneumothorax, the latter being followed by a slight attack of pleurisy.

April 5th. Feels better to-day than he has done for a long time. Has (notwithstanding this) very violent action of the heart, and an unusually anxious countenance. Gurgling distinctly heard below the inferior angle of the left scapula. In very much this condition the patient remained until April 29th, using the remedies above mentioned. That an increase of the local disease took place there was no doubt. I could not observe any decided improvement in his general appearance, though the man was very positive such was the case, feeling, he said, much brighter and stronger than he was at the time of his

admission. Contrary to our judgment he determined to return to Wales, and was discharged at his request for that purpose April 29th, 1850.

CASE VIII.—A seaman, æt. thirty-eight, born in United States, dark hair, sallow complexion. This patient entered the hospital September 25th, 1850, with pneumonia of the right lung slightly involving the left lung. He was too ill at the time of his admission to give any account of himself; the following was subsequently learned. That during the last year he had always had a cough after the slightest exposure to cold. Had never had hæmoptysis: did not know that any of his family had had consumption, but recollected that his father had a cough for a long time; had been in the habit of drinking freely. Had attended to his work until a week before his admission. At that time had a chill followed by fever, &c. Had had more or less pain in his liver for nearly five years; had an attack of pleurisy many years ago. At the time of his admission was suffering much from partial dyspnœa, pulse frequent and feeble. There was no reason to suspect the existence of tubercles, the patient having all the signs of pneumonia in its second stage. Percussion dull on the right side posteriorly; tubal respiration and crepitant râle. Expectoration rusty and tenacious; no delirium; countenance expressive of great distress.

The application of a few cups to the back of the chest followed on the succeeding day by a blister was the only depletion resorted to, the patient's asthenic condition forbidding any more active treatment. For two days he used small portions of calomel and opium; it was soon found necessary to omit these and to substitute ammoniæ carb. gr. iij; senegæ syr. fʒss q. t. h.; brandy punch tablespoonful every hour. Good diet.

Under this treatment the urgent signs of the disease abated and the patient though very feeble, was deemed convalescent.

March 17th. Pulse rather more feeble; has no appetite; coughs very much, and expectorates largely (nearly twelve ounces) of muco-purulent matter. R. Tr. cinchon. comp. fʒj, q. q. h. To have a bottle of porter, oysters, eggs and chicken. *18th.* Much more comfortable. *19th.* Very much troubled by diarrhœa. Ordered an enema of sixty drops of laudanum. *21st.* Crepitant râle still heard though coarser. While ausculting this morning, thought I could hear indistinct gurgling, about two inches below the inferior angle of the scapula, as if there might be a deep-seated abscess of the lung, corresponding with that point. Cough troublesome; uses solution of sulphate of morphia fʒj at night. Has less bowel complaint. *23d.* Diarrhœa has returned; omit the syrup of senega, which with the carbonate of ammonia he has continued to take occasionally. *31st.* Very much jaundiced this morning: no other change.

April 11th.—Sat up to-day; vesicular murmur more distinctly heard to-day than at any previous time since his admission. The marked evidences of disease at the lower and posterior part of the lung had led us to neglect a close observation of its upper portion. On a closer examination of this at this

time, there was found comparatively healthy respiration at the summit of the left lung, but, on the right side dulness on percussion extending from the clavicle to the third rib; cavernous respiration and gurgling below the right clavicle. Cough very troublesome, expectorates large quantities of puriform matter. R. Ol. jecoris aselli f3ss ter die. R. Potass iodid. gr. v ter die.

24th. Has had several attacks of diarrhœa. Thinking this might be increased by the oil, it was omitted, and a mixture of chalk and kino ordered, which has diminished though it has not entirely checked the bowel complaint.

May 11th. Debility increased; has resumed the use of the oil, omitting it when there has been an increase of diarrhœa. Takes essence of beef in addition to his other remedies. 24th. Pulse and voice very feeble. To-day has rude respiration at the summit of the left lung posteriorly, sub-crepitant râle, and loud bronchophony at lower part of right lung posteriorly; with the signs before noted. Has been obliged to omit the oil on account of a threatened attack of diarrhœa. Complains very much of his throat, which he says feels entirely raw—for this is using alum and conserve of roses. 31st. Has continued to grow weaker, and died to day at 8 o'clock P. M. The autopsy was made twelve hours after death.

Exterior.—Rigidity incomplete, emaciation extreme, a large cicatrix on the left leg, the remains of an old ulcer.

Neck.—Larynx and trachea tuberculous and ulcerated in their whole length. Posterior portion most affected: this ulceration appeared to extend for a short distance into the right bronchus.

Thorax.—Firm pleuritic adhesion; pleura thickened and studded with numerous small tubercles. Summit of the left lung indurated with tubercles. Tubercles scattered throughout the lung. Along the outer side of this lung were found myriads of minute tubercles resembling the roe of fish in their number and arrangement. Bronchial glands near the root of the lung very much enlarged and containing a cheesy substance. The two lobes adherent; base of the lung adherent to the diaphragm. The right lung at its summit adherent to the chest; immediately below this a vomica as large as a duck's egg. Crossing this cavity were several bands, which seem to be the remains of vessels, the surrounding tissue having been destroyed. About an inch and a half above the base of the lung was found a large abscess, deeply-seated and full of most fetid pus. Numerous tubercles in its vicinity. Pleural surface of the pericardium thickened, adherent to the left lung, requiring dissection to separate it. On its internal surface it was firmly adherent to the heart by a false membrane about a line in thickness. When separated, this presented a beautifully tufted or papillary appearance, closely resembling the tongue of a bullock. The membrane having been closely examined, was found covered with minute tubercles. The size of the heart natural or nearly so; flaccid; a slight coagulum in the right ventricle; the cardiac valves, and the aorta and its valves healthy.

Abdomen.—Liver usual size, of a pinkish hue externally. Its surface cor-

rugated as if by cicatrices; these did not extend into the substance of the gland; this appeared to be healthy. Gall-bladder nearly full of bile. At the apex of the gall-bladder on its external surface a small tubercle existed. Spleen natural size, its exterior surface white from old exudation. Throughout this viscus were found small white round depositions of a bony hardness, about the size of a pin's head. These might perhaps be called bony tubercles, but from their consistence and the integrity of the tissue in their immediate vicinity could scarcely be considered identical in character with those found elsewhere. Stomach, inner surface softened, and of a variable red colour; miliary tubercles found on its greater curvature, and covering both the large and small intestines. Numerous ulcerations apparently of tubercular origin in both large and small intestines. Mesenteric glands enlarged, and containing tuberculous matter. A few, though not all of them, in the softening stage. Left kidney contained one tubercle; right kidney healthy. The ureters and bladder were not closely examined.

CASE IX.—A shoemaker, æt. 50, born in Ireland, married, of sober habits, was admitted February 13, 1850. Seven years before had influenza, since which time he had always had cough in the morning; though not amounting to anything serious. Gave up work in the early part of August 1849, on account of a shortness of breath and oppression about the chest, which he attributed to exposure to wet while working in a dye-house. After this, went to the sea-side, where he became much worse. From this time his cough increased, with expectoration, amounting to nearly half a pint of matter mixed with blood, daily; suffered much from exhausting night sweats. Had been much troubled with costiveness, sour stomach and want of appetite.

At the time of his admission, in addition to his dyspeptic symptoms he had a pale and anxious countenance, was harassed by cough and copious night sweats, followed by hectic fever and accompanied with entire inability to sleep. The physical signs were, loud amphoric respiration below the right clavicle with occasional mucous gurgling; bronchial respiration at summit of left lung posteriorly, with faint crackling. Percussion obscurely dull below the left clavicle, very marked *bruit de pot fêlé* a slight distance below the right clavicle; copious purulent expectoration. The evidences thus afforded of an enormous cavity were very decisive. He was ordered to take cod-liver oil in the usual dose, and a cough mixture, each dose containing equal parts of solution of sulphate of morphia and of syrup of senega four times daily. To have milk and No. 4 diet.

These symptoms continued, with but little amelioration, for nearly five weeks; at the end of which time my attention was called by both nurse and patient to his improved appetite, and on my own part to the absence of the anxiety of countenance with which the man entered the hospital. This was gradually followed by a diminution of cough and of expectoration, by marked increase of flesh and strength and by the entire disappearance of hectic.

He remained in the house until May 20, 1850, fourteen weeks; and was

discharged at his own request, to return to his work, believing himself to be perfectly well: the physical signs having undergone no other change than the disappearance of a mucous râle which had been occasionally heard below the right clavicle. For many weeks before his dismissal he had entirely ceased to complain of any dyspeptic symptom with the exception of occasional constipation.

September 25th. This man called at the hospital to day, looking even better than when he left us. He has continued to use the oil, and asserts that he is perfectly well. The amphoric respiration and *bruit de pot fêlé* still very marked.

CASE X.—A seaman, æt. 22, born in United States, entered the hospital March 16, 1850; of medium height, light hair. Three years before, had a hemorrhage from the lungs, and lost about six ounces of pure fluid blood. Did not suffer any serious inconvenience from this. Had had a slight cough for nearly two years, but not sufficient to seriously annoy him, until about two months before his admission. Within the last two months had suffered much from cough and obstinate diarrhœa. Had been troubled with pain in the region of the kidneys for a long time. The bowel complaint commenced about two months before he came here. At first had three or four passages daily, subsequently the number was very much increased, occurring as often as every second hour. Had lost twenty-eight pounds in weight during the last four months. Both parents alive and well.

17th. Patient feeble, and much emaciated. Coarse mucous rales below the right clavicle, and crackling in left subclavicular region. Percussion dull or nearly so for two inches below the left clavicle. Expectoration very slight. Was ordered cod-liver oil, tablespoonful thrice daily, and, to quiet his cough, a mixture of sulphate of morphia and tolu.

Rest and the supine position were for a few days enjoined, and were followed by a diminution of his diarrhœa. On the 22d, there was a return of diarrhœa, and he had eight discharges. To correct this, acet. opii, gtt. v four times daily, were prescribed. *24th.* Complains very much of pain in the abdomen and of sick stomach. Omit the morphia and tolu, and increase acet. opii to eight drops every third hour. *27th.* Diarrhœa continues. R. Cupri. sulphat. gr. $\frac{1}{2}$, opii pulv. gr. $\frac{1}{2}$ 4 t. d. R. Acet. opii gtt. viij ter die. *28th.* Diarrhœa diminished to once in twenty-four hours, but is nauseated after taking the pills, which are to be temporarily omitted. *30th.* Very feeble. R. Vini rubr. f3vj daily; two passages to-day. *31st.* R. Bismuth subnit. gr. x ter die.

April 1st. Four passages in last twenty-four hours. R. Bismuth subnit. gr. xx 4 t. d.

5th. Cough very troublesome; is unable to sleep after 2 o'clock A.M. without an additional opiate. Has an occasional anodyne enema. The oil has now been omitted for a few days; finding no diminution in the number

of discharges, its use is to-day resumed. 14th. For a few days has had four discharges daily; pulse very feeble, but as from the beginning has very little expectoration. 30th. Very feeble, and becoming daily more emaciated; bowels moved three times daily. His debility rapidly increased, and the man died, May 2d, 1850. The autopsy was made twenty-four hours after death, with the following results.

Exterior.—Emaciation extreme.

Thorax.—Old pleuritic adhesions; a small cavity at the summit of each lung; left lung adherent at its summit to the rib, torn by its removal from the thorax. Other parts of the lung found to contain numerous small miliary tubercles.

Abdomen.—Liver healthy, gall-bladder empty. Spleen usual size but soft. Abdominal peritoneum healthy; intestinal peritoneum covered with tubercles of all sizes, and almost innumerable. Mesenteric glands enlarged and tuberculous. Intestines both large and small containing numerous ulcerations apparently of tubercular origin. One tubercle found in the right kidney.

CASE XI.—A carver and gilder, æt. 19, medium height, light hair, delicate complexion, born in Ireland, was admitted March 9th, 1850. When a lad, had a swelling of the submaxillary glands; with this exception had had good health until August 1849. First had cough and sweats during the night; had had but little expectoration. Bowels regular for the most part, though a little inclining to costiveness. Six weeks before his admission, had a very slight hæmoptysis coming on after a violent attack of coughing. Was not aware that any of his relations had had consumption; attributed his illness to sudden exposure to cold after working in a hot room. Did not give up work until four weeks before he came here.

At the time of his admission, emaciation considerable, but by no means extreme, great lividity of fingers; rigors and hectic daily. Sub-crepitant râle under left clavicle, with circumscribed dulness at the summit of left lung. On the 10th was ordered cod-liver oil, tablespoonful three times daily. Pil. ferri. carb. gr. v. ter die. No. 4 diet.

This patient remained in the hospital four weeks without any improvement in his condition, while he continued to suffer from increased rigors and hectic. About six weeks after his admission there appeared to be a slight improvement in his appetite and strength. The following note was taken: April 25th. Distinct crackling heard under each clavicle after coughing, loud bronchial (almost cavernous) respiration below the right clavicle.

May 14th. During the last fortnight, has complained very much of pain in the abdomen and of bowel complaint; this last has been checked by anodyne enemata.

At this time, a very marked change had taken place in the appearance and condition of the patient. He was discharged at his own request, to go in the country, May 18th, 1850; having gained greatly in flesh and strength,

weighing within a pound of his weight previous to the commencement of his illness. His master, who had not seen him since his admission until this time, was very much surprised at his improved appearance. Notwithstanding this unequivocal improvement in the general symptoms, there has been a steady increase of the local disease as shown by the physical signs.

Oct. 1st. Have to day heard of this patient. He continued to improve for about two months after his dismissal from the hospital. Used the oil, though irregularly. In the early part of September, had an increase of his symptoms after exposure to the damp and cold. A week or two after left for Ireland, where he arrived safely, and was living at last accounts.

CASE XII.—A servant girl, æt. 20, born in Ireland, rather above the medium height, with light brown hair, was admitted July 28th, 1849. This patient did not come under my notice until December 25th, five months after her admission. At that time she gave the following history of herself. Three years before, had hurt her side while lifting a heavy weight. Pain in her side had continued for a long time: was treated for liver complaint, but was not salivated. During this time was able to attend to her work, though feeling very weak and languid. Had had but little cough until April 1849. Attributed this to exposure to the damp and cold after sunset. During the month of May, frequently had chills followed by fever. No other member of her immediate family had had consumption, but two maternal aunts died of this disease. Had had several slight attacks of hæmoptysis.

She was admitted into the hospital merely as an act of charity, being thought too ill to send out of the house, but with little hope of surviving many weeks. Was at first ordered *infus. prun. Virginian. Oj daily. Vallet's carbonate of iron, gr. v. ter die, and an anodyne. Nov. 6th. R. Ol. jecoris aselli, f 3ss ter die. No. 4 diet and milk, &c.* The following is a note of her condition in the latter part of December.

Amphoric respiration with metallic tinkling two inches below the left clavicle; very loud bronchial (almost cavernous) respiration below the right clavicle. Has hectic, exhausting night sweats, rigors, chronic laryngitis, with almost complete aphonia. Has recently had frequent attacks of diarrhœa, which are temporarily checked by *acet. opii gtt. v. q.q. h.* Is unpleasantly affected by sulphate of morphia, but not by black drop. Has frequent attacks of intense pain in the head, relieved by the application of a mixture of chloroform and camphor.

March 6th, 1850. Up to this date has taken cod-liver oil, though at first with much difficulty, using at that time the dark-coloured oil. I am assured by the gentlemen under whose care she has been, that although there has been little or no marked improvement in the local disease, yet that the disease has made little or no progress since her admission, and they are decided in the belief that this may be safely attributed to the use of the oil.

April 5th. Pulse very feeble; complains of pains in her chest and abdo-

men. Sputa nummular as before, but somewhat bloody. Bowels moved four times in the last twenty-four hours. 24th. Great dyspnœa and diarrhœa. To correct this last, astringents and anodyne enemata have been used in vain. 26th. Great dyspnœa and universal malaise. Continued to grow feebler and died, May 3d, 1850. Permission for an autopsy was positively refused.

CASE XIII.—A servant girl, æt. 15, born in Ireland, short stature, with dark hair and eyes, had been four years in this country, was admitted November 9th, 1849. Had been ill for eighteen months. First had intermittent fever (?) (living in a malarious district), which continued for five weeks and was followed by cough and hæmoptysis. After this had a greenish-yellow expectoration, and lost flesh rapidly. Her mother is said to have consumption; her paternal grandmother died of this disease. [The note of the physical signs at the time of her entrance has been mislaid; they were those which positively indicated the existence of a tubercular cavity at the summit of the right lung.]

Was at once placed on the use of cod-liver oil in the usual dose. At first took the dark-coloured oil, subsequently the pale oil. At first took it alone, but became nauseated; took it without difficulty in the foam of porter. The patient used the oil for about four weeks before any improvement could be perceived. About a week later, had less pain in her side and less dyspnœa, and thought herself a little stronger than before. In two months time found that she was growing fatter. She continued steadily to improve until her dismissal, and was discharged at her own request, January 22d, 1850, being at that time of full face, as strong as she ever had been, having no cough or expectoration, bowels regular, and able to attend to her usual work, the physical signs being cavernous respiration and a peculiar *clicking* sound at the summit of the right lung. In reply to a question on the subject, she states she could not perceive that the oil had any effect on her bowels. She also states that she could take the medicine more readily immediately before meals than at any other time.

August 31st. The patient called here to-day. Is in very much the condition that she was when she left here. Has continued to take the oil as directed.

CASE XIV.—A servant girl, æt. 18, born in United States, of scrofulous appearance, with light hair and of medium height, was admitted December 11th, 1849. Gives the following account of herself. Had had sore eyes (scrofulous ophthalmia) for a long time; with this exception had been in pretty good health until four months before her admission. At that time had her feet wet, and took cold; this was followed by cough, which has continued to grow worse. Coughed until she vomited, after walking but a short distance. Had loss of appetite; two months after her cough commenced, began to spit freely of yellow matter. Had never had much pain in her chest; had had no hæmoptysis; bowels regular, but had not menstruated for nearly six months. Had rapidly lost flesh; had chills and fever (hectic) every day. Had shortness of breath, espe-

cially in the evening; and during the night exhausting sweats. Had been under no medical treatment. Both parents died of consumption.

At the time of her admission these symptoms just enumerated existed in their full force. The physical signs were, bronchial respiration below each clavicle, most marked on the left side; slight dulness on percussion, and subcrepitant râle at the summit of the left lung.

The patient was directed to take cod-liver oil $\text{f}\text{ʒ}\text{ii}$ ter die (the dark oil), but was unable to retain it. It was omitted, and *infus. prun. Virgin.* $\text{f}\text{ʒ}\text{ii}$ t. d. was substituted; was also ordered a cough mixture.

For six weeks these symptoms continued; at the end of this time she resumed the oil in the infusion of wild-cherry bark, but was unable to continue its use on account of its obstinately nauseating effect. It was again omitted. The light oil was then given in the foam of porter, but owing to her great aversion to it, the patient did not at first take more than a tablespoonful daily. A fortnight later she was able to take it in the usual dose. Its use was continued for two months before any positive benefit was perceived either by the patient or by her physicians. The first change noticed was the disappearance of hectic fever; gradually the cough diminished, an improvement of the appetite took place, and, she states, after three months time she found herself rapidly gaining flesh.

June 20th, 1850. She has taken her medicine regularly up to this date, and now requests to be discharged; says she feels perfectly well, has little or no cough, no night sweats, no expectoration, no thoracic pain, sleeps well, has good appetite, and is regular, both with her bowels and catamenia. So far as we can judge from the rational symptoms, this patient should be pronounced perfectly well; but the improvement in the physical signs is very far from coinciding with these, for we now have obscure dulness below the left clavicle, with rude respiration and subcrepitant râle. Loud bronchial respiration, amounting almost to cavernous, and very distinct subcrepitant râle at the summit of the left lung—showing in fact rather an increase of the local disease, while there has been so marked an improvement in the general health. She is anxious to return to her home, and is this day discharged.

Remarks.—If we look over these reports, we shall find that in Case I., of whose history it will be seen I have but imperfect notes, the result was what will frequently be found to occur, though to a greater extent than in this man, namely, an increase in weight and strength, while no change takes place in the local disease.

In Case II. the disease had so far advanced as to give us no hope for improvement, yet the progress of the disease appears to have been arrested for a time, though but for a time. This case as well as others confirmed an observation made to the writer by an eminent physician of Baltimore, that although up to a certain period the oil may prove beneficial, yet that there is a time in the advanced stages of the disease in which it ceases to have any appreciable

effect whatever. In such cases we have temporarily omitted and then resumed its use. If this insensibility continue, it has been thought both unnecessary and injurious to urge its further use.

Case III. illustrates a fact of some importance, namely, that the oil in some instances may be given, even though diarrhoea exist; and that patients may fatten and gain strength under its use even with this additional drain on their constitution. This too was an instance of life prolonged apparently by the use of the remedy.

Case IV. is a most striking instance of the happy effects which sometimes result from the use of the oil. Cough, emaciation, debility, &c., all successively disappearing while using this medicine, and this medicine alone. With this man there was, too, a decided improvement of the local disease, as shown by the physical signs. Case V. is but an analogue of the second case reported. Case VI. is an instance of what has been alluded to, the very marked improvement in the general health and strength under circumstances the most unpromising. It is indeed difficult to imagine a more discouraging case than this presented at the time of admission; yet this patient's life was prolonged for nine months, and was lost at last by a disease to a certain extent connected with his tubercular diathesis, yet not properly by the pulmonary affection.

The results of the autopsy may perhaps call attention to a remark made by Dr. Williams on the increased size of the liver during the use of cod-liver oil. The following are the words alluded to: "I have in numerous instances remarked that the bulk of the liver (as determined by percussion) becomes augmented during its use, yet without tenderness, or any other sign of disease."* Now we find that during life this increased bulk was noticed and abundantly shown by the inspection. A single case proves but little, but taken in connection with other observations may perhaps lead to some conclusions on the subject of the mode in which cod-liver oil operates. It is well known to pathologists that an augmentation in the volume of this organ is one of the most frequent attendants of phthisis pulmonalis. Louis found it to occur in forty out of a hundred cases. Opportunities for making inspections of phthisical subjects are frequently afforded at the hospital, but in no instance which has come under the writer's notice has there been an increase so evident during life, or so marked on the post-mortem examination as this case presented.

In Case VII. there was little or no evidence of any good following the exhibition of the oil. The patient was very positive in an opposite belief, but this infatuation is by no means uncommon; certain it is that very rapid progress was made by the local disease notwithstanding that the oil was steadily taken.

In Case VIII., so far as the oil is concerned, little can be learned, as the patient took it but for a short time and irregularly, and at the same time was using active tonics. This was the only case in which the diarrhoea seemed in-

* London Journal of Medicine, January 1849, p. 16.

creased by the use of the oil. It was however thought at the time that any liquid not positively astringent would by its bulk alone, in the man's condition, have produced a similar result. The results of the inspection have been given in full as a striking instance of almost universal tuberculosis, coinciding with the well-known fact that pneumonia occurring in a tubercular diathesis may frequently be followed by phthisis.

The result in Case XI. was most gratifying. The age of the patient, the advanced stage of the disease, and the great size of the cavern, gave little hope of amelioration much less of recovery; yet under treatment the results mentioned in the report followed, and the man is at this time engaged at his daily labour. The disappearance of his dyspeptic symptoms while using cod-liver oil cannot, I think, authorize us to consider the oil an anti-dyspeptic any more than the return of the menses in Case XIV. would justify us in calling it an emmenagogue. To the improved general health and strength must each of these results be ascribed. Case X. is an instance in which the oil as well as the other remedies used proved utterly impotent. We would of course suspect that in those cases where the tubercular disease is so universal, the remedies used would be less beneficial than if the disease were limited to one organ. With him there certainly was no good derived from the use of cod-liver oil; nor was there on the other hand any increase of diarrhoea following its exhibition. Case XI. is another instance of the fattening and strengthening properties of the oil, and another instance of non-increase of diarrhoea from its use. Case XII. is imperfect from the absence of a post-mortem examination; in other respects it corresponds with the third case reported. Cases XIII. and XIV. are both instances of very happy effects following the use of the oil. Case XIV., too, shows the propriety of not laying aside the oil from any aversion, however decided, which the patient at first may have to it; it also encourages its protracted use, even though it may have been taken for a long time without any appreciable benefit.

The question now very naturally arises, Have the results of the cases under treatment in the hospital been such as to authorize the statement that cod-liver oil will cure pulmonary consumption? I regret to state they have not. Certainly the cases reported do not warrant an affirmative reply, and they, though but a part of those under care, faithfully indicate the average result. We certainly have had no case of pulmonary consumption, unequivocally marked, in which all the evidences of disease, as shown by the rational symptoms and by the physical signs, have disappeared. The nearest approach to this is Case IV. which is the patient referred to in the third edition of Dr. Gerhard's work on *Diseases of the Chest*, p. 238. Even here, although there appears to have been a very marked improvement in the physical signs, the evidences of local disease were not entirely removed, and the patient cannot be said to have been perfectly cured. On the other hand, it will be seen that in all the cases reported the disease was in an advanced stage. In six of the number, the physical signs were those of a cavity in each lung. In each of

six others a cavity existed in one lung, while in the remaining two the disease had advanced to the stage of softening. Under ordinary treatment, little or no happy result could have been expected; yet we find that of this number in five the disease, though terminating fatally, appeared to be for a time arrested; and that there was in these a decided though temporary increase of strength. One patient left the hospital somewhat improved, and five were so much benefited as to be able to return to their former occupations, believing themselves to be well; and so far as the rational symptoms were concerned, really so; while but in two instances do we find an entire insusceptibility to any good influence of the remedy.

And here I cannot avoid the remark, now fortunately almost supererogatory, that a knowledge of physical diagnosis is of the utmost importance in all cases of thoracic disease. Without such knowledge, five cases above alluded to would have been pronounced entirely well. This too may lead us to suspect that, in some (of course, not nearly all) of the cases reported in the journals as complete recoveries, this test has been neglected.

We have used, in the hospital, two kinds of oil, the pale and the brown oil. My own impression is that of these two the genuine pale oil is preferable; not that it is more efficacious, but that it is equally so, while it is much less offensive than the brown oil. Certain it is that there are patients who can take the pale oil without difficulty whose stomachs have steadily rejected the darker kind. In all the cases here reported, the pale oil has been used during a greater part of the treatment. A distinction should be made between the pale oil as obtained in that state from the fresh liver of the fish and much of that sold in our markets as pale oil, which is really the brown oil decolourized. As will be seen hereafter, this latter is thought to have been injured by the process required to effect this change. If the vender of the pale oil can be depended upon, this should certainly be preferred; if not, it would be safest to purchase the dark oil, which, from its cheapness, offers no inducement for adulteration, and which is always the oil of genuine though of old and too often of putrid livers.

We have generally allowed our patients to choose their own vehicle and time for taking the oil, attention being given that the entire amount prescribed was each day taken. It has been generally taken in the foam of porter, though a few patients preferred to take it in milk; by the majority, it was taken immediately before meals, but by a few it was most easily taken an hour after meals.

Being desirous of obtaining some information on the mode of preparation of the oil used in this country, and to ascertain if it corresponded with that employed in Europe, the writer addressed a number of questions to a gentleman residing near Boston, who, for thirty years, has been largely engaged in the preparation and sale of cod-liver (or, as during a greater part of that time it has been known, of tanners') oil. The following passages are taken

from the reply. These statements, which can be relied on, will be found to be very similar to those given by De Jongh in his treatise on cod-liver oil.

"In preparing cod-liver oil for medicinal purposes, the livers should be selected from healthy fish, and used immediately after the fish are caught. We use the water-bath, by having double kettles, holding from fifty to sixty gallons each. The livers should be washed clean, and put in the kettles whole, and heat applied. The oil thus obtained should be taken from the kettles in an hour, or an hour and a half, and strained through a fine cloth. Another filtering is needed after it has cooled off."

"The oil thus obtained is the pale oil; the heat used should not be above 180° (Fahrenheit)."

"The livers vary very much in quality at different seasons of the year. At this time (November 12th, 1850), they are very fat; one hundred pounds of livers will yield forty pounds of oil. They will yield about this proportion until January; after that, they will begin to grow poor, and will continue so until April or May, when they will yield scarcely any oil, though the fish seem at this time to be as thrifty as at any other season."

"The livers of the cod-fish require considerable sorting, as there is quite a number of diseased ones among them."

"In obtaining the dark-coloured oil, the livers are thrown into casks, holding from three to six barrels each, standing in the sun. By this exposure to sun and air, the red color is obtained. This oil is from one to three months in making."

"The dark-coloured oil *can be made light* by a process of bleaching with an alkali, which we consider destroys all the good properties of the oil."

"When the pale oil becomes of a certain age, say from six to twelve months old, the properties of the oil become so much impaired that sulphuric acid will not produce the pink or red colour in any way."

"In regard to the oils sold as cod-liver oil, I should judge, from the quantity of oil sold and for sale, that not more than one-quarter part is genuine cod-liver oil. Our best livers are obtained near Lynn, Mass."

"We consider the best method of testing the oil to be, to take a small vial half full of the oil, add say one-eighth part of nitric acid, shake it well together; if it turns a handsome orange colour, and remains so for thirty minutes or more, it is a test for *pure* oil; but, if it turns quite dark, it may be suspected that other oils are mixed with it."

The writer adds that he has known it to be used medicinally, by those engaged in its preparation, for nearly thirty years.

If I mistake not, it is highly important that the real value of this remedy should be soon determined. Exaggerated impressions of its worth have no doubt been made, to be followed by their necessary disappointments. All the results promised by some writers from it have certainly not followed its use in the hospital, nor in a large number of cases in private practice, which, through the kindness of his medical friends, the writer has had an opportunity of closely watching. On the other hand, we can positively say that most of our patients, while using the oil, have increased in flesh, in weight, and in strength; that with most of them there has been a diminution of cough and of expectoration; that with some of them hectic and rigors have entirely disappeared; and that there have been some so benefited as to be able to resume their former occupations. We can also understand that it may so

strengthen the patient as to enable him to make use of those hygienic means which are so efficacious; that it may thus, perhaps, indirectly cure consumption. Again, in phthisis, as the local affection is but a part of the disease, if the general health continue to improve, we may hope the diathesis will be, in the course of time, thoroughly changed, and thus, perhaps, cod-liver oil may cure consumption. But these suppositions are merely such; the assertion of its good, but limited, effects are positive. The first may happen, the last have happened.

An objection has recently been made to the use of cod-liver oil that it produces pulmonary congestion and hemorrhage. This is a plausible suggestion; we have not found it to exist in practice. The only instance in which an attack of bleeding could be positively traced to the use of the oil was that of a patient admitted for hæmoptysis, who, after having been in the house for several weeks, with great improvement of his hemorrhagic symptoms, was placed on the use of the oil from some suspicious physical signs. Nausea and emesis were produced by the oil, and a hemorrhage followed the act of vomiting. This may suggest a caution under similar circumstances.

It will be seen that in no instance did any decided benefit arise from the oil until it had been used for at least four weeks; it is equally important to observe that to be of any permanent benefit its use must be persisted in for a long time, even after the most striking symptoms of the disease have in great measure disappeared; a fact of which we have always endeavoured to impress the importance on our patients at the time of their dismissal from the hospital.

Although then, in conclusion, our experience has not been quite so gratifying as has that of some others, yet the writer is fully prepared to say that he believes cod-liver oil to be by far the best remedy for phthisis pulmonalis of which we have at this time any knowledge; and that to neglect its use in cases of this disease, unless there be a strong contra-indication, is, under existing circumstances, both injudicious and culpable.

PENNSYLVANIA HOSPITAL, November 13, 1850.

ART. III.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, M. D., Secretary.

July 22.—*Acute Laryngitis complicated with Inflammation of the sub-mucous Cellular Tissue of the Trachea.* DR. BUCKMINSTER BROWN reported the case.—The patient was a labouring man, forty-five years of age. Was called to him March 28th. On the Tuesday previous, he had been all day exposed to a heavy snow storm, while at work on one of the wharves. The snow penetrated between his coat collar and neck, so that the sides of his

neck and throat were kept cold and wet throughout the day. At night he had a severe chill, and had a succession of chills and rigors until morning. It was impossible to warm him; he had had a cough all winter, and this still troubled him. When first seen by me, which was not until Thursday eve, he was suffering from extreme pain in the right side of his neck, extending from the angle of the jaw down to the sternum, shoulder and chest. There was an evident swelling from the lower edge of the maxillary bone to the clavicle. This part was very sensitive to the touch. He was purged by calomel and jalap, and a mustard plaster applied to the throat. This afforded very considerable relief, and in the course of the next day, the pain left this side of the throat, and attacked the opposite. Here the suffering and tenderness were also very great, and the respiration became affected. Leeches were applied, the mustard plaster repeated, and in the course of the disease, the patient was bled, but without relief. The patient was seen by Dr. Francis H. Gray and Dr. J. B. Brown. Respiration was now very laboured, and accompanied by a groan at each effort. Pulse 92. Percussion was good all over the chest. When told to take a full inspiration, the respiratory murmur throughout was perfect, but the moment the voluntary exertion ceased the patient seemed much exhausted, and sank into a dose. Not the least sound could then be heard; respiration appeared to be entirely suspended, and it was evident that no appreciable amount of air was admitted into the lungs. This was of itself sufficient to point out the seat of the disease. This phenomenon was so striking that it forcibly reminded me of the similar effect which would be produced by a paralysis of the involuntary muscles of respiration, the lungs being expanded only when the voluntary muscles were called into action.

On the 4th day of my attendance, I discovered an ulceration of the left tonsil; this was the first visible sign of disease on the inside of the throat. There had been, on previous examinations, but slight indications of inflammation existing about the fauces. He expectorated a considerable quantity of thick, viscid mucus, and some pus. Both sides were now greatly swollen externally. Deglutition neither obstructed, nor greatly painful; could swallow pills without difficulty.

On the 5th, all the symptoms aggravated, countenance expressing extreme anxiety, pulse 160, fluttering, irregular. Died at 10 A.M.

Post-mortem examination at 9 next morning. The lungs, heart, and all the organs contained within the chest and abdomen, perfectly healthy. In dissection, there was found intense inflammation over the whole internal surface of the larynx and trachea, with some effusion of lymph.

Sept. 9.—Carcinoma of large Intestine; opening into the Jejunum.—Dr. JACKSON reported the case, of which he had recently made the examination.—The patient was a man 63 years of age, and had been under the care of Dr. Jeffries for about four months; having been ailing somewhat for a short time before. When first seen, he had a large knobbed tumor below the left hypo-

chondrium, which was probably owing to fecal accumulation in the colon; this gradually diminished, and for the last six weeks was not felt. Great pain, with defections; tenesmus; and towards the last, discharges of blood, with vomiting of the same. Complete anorexia for some time before death. Patient confined to his room from the first of his sickness, and to his bed for about six weeks; becoming much reduced, and extremely emaciated. Case diagnosticated by Dr. Jeffries as one of cancer of the intestine.

On dissection, a diseased mass was found, about as large as the fist, at the angle which the arch of the colon makes with the descending portion; the entire calibre of the intestine being destroyed to the extent of four or five inches, and presenting upon the inner surface an exceedingly irregular, foul, blackish surface. In the midst of this last, and insulated, as it were, was a portion of perfectly healthy intestine, more than three inches in length, and towards two inches in width; the edges only being diseased; from the development of the valvulæ conniventes, this was seen to be a portion of the small intestine. Externally the jejunum adhered, just beyond the mesocolon, to the diseased colon, and it appeared like an ordinary though very close adhesion; yet nearly or quite one-half of the calibre of the small intestine was destroyed to the extent to which it adhered. The foul cavity, then, above referred to, had a free opening, above and below, from the small as well as from the large intestine. About this cavity was a considerable quantity of soft, crumbling encephaloid substance, not perfectly opaque, but having some resemblance to a decayed pear. The other organs were quite healthy. Dr. J. remarked upon these local, circumscribed, carcinomatous affections, not merely in the rectum but along the course of the colon, as of not very rare occurrence.

Sept. 9.—Tracheotomy for Edema of the Glottis.—Dr. S. PARKMAN had recently performed this operation, on a man thirty-two years of age, who reported that he had been suffering from dyspnœa for seven weeks. On his entrance into the hospital, the dyspnœa and dysphagia were extreme; most of the fluids attempted to be swallowed returning through the nostrils. The fauces presented extensive cicatrices of syphilitic ulceration, which had destroyed the pendulous palate and the pillars of the isthmus. By the finger the epiglottis was felt swollen, and there was a sensation as if it were ulcerated. In the front of the larynx there was a small abscess discharging pus. There being no relief from the remedies employed, of which cauterization with nitrate of silver was the most active, and death appearing imminent, tracheotomy was performed, and a tube inserted. The relief was immediate, and the patient at once fell asleep, and remained so for eight or ten hours. The relief was not permanent, and the patient died with symptoms of pneumonia of both lungs, on the second day after the operation. The larynx, examined after death, presented some œdema, but the cause of the dyspnœa was seen in the thickening of the epiglottis and the edges of the glottis, from long inflammation. There was pneumonia of both lower lobes.

Sept. 23.—Melanosis of the Eyeball. Case reported by Dr. BETHUNE.—The patient, a gardener, thirty-six years of age, had enjoyed good health till within sixteen months. After being wet on one occasion, was attacked with pain through left eye and back of head, with redness and soreness of the organ. This continued from time to time gradually affecting the sight. No vision for six months. Six months ago the ball gave way and began to swell. This has constantly increased from that time. Right eye well. The globe of left eye disorganized and projecting between lids, of the size of a small apple; red, firm, and covered at lower part with dry, everted conjunctiva lining lower lid, at points thick and loose; around inner edge of orbit, above and below is felt a firm irregular mass.

The specimen, after removal, presented the following appearances—an ovoid mass somewhat knobbed upon the surface, as is usual in this disease. An incision having been made through the mass antero-posteriorly, it measured upon the cut surface, in this direction, a trifle over one and three-quarter inches, and, transversely, one and a quarter inches. The outline of the globe of the eye upon this surface was perfectly distinct, the sclerotic coat upon one side being entire and in appearance sufficiently healthy; upon the opposite side this tunic had disappeared, but the outline of the globe was not the less defined. Form of the globe altered, though there was no enlargement; cavity completely filled by a uniform black, melanotic mass; nothing seen of the lens nor anterior chamber; a trace of the cornea, however, was observable. Immediately external to the globe was a large mass exactly resembling that which fills the globe itself. The remainder of the diseased mass, constituting a majority of the whole, varied much in color; a part of it consisting of a uniform, close, compact white structure without any trace of discoloration, by far the greater part, however, being more or less gray and passing almost gradually into black; the consistence of this colored portion also being rather firm, or at least solid; these differently colored portions showed no tendency to intermix, but seemed almost composed of distinct globules. No fat within the mass, and none of the usual appearances of encephaloid.

By the growth of the mass within the orbit, the eye was pushed forward, so that the distance from the posterior extremity of the tumor to that of the globe of the eye measured one and a quarter inches, and this would be the extent to which the optic nerve, if it any longer existed, would have been drawn out. The incision was carried through what seemed to have been the course of the nerve, but the latter as such could nowhere be distinctly seen.

Dr. Bethune remarked that this was the third case of melanosis and fifth of cancerous disease of the eye in which he had operated. This was the youngest patient he had seen with the disease.

Sept. 23.—Case of an Affection of the Olfactory Nerve, with total loss of Smell and Taste; with remarks upon the probable identity of these two senses. Read before the Society by Dr. KNEELAND.—The patient was an American woman

æct. forty-seven, married, and the mother of several children; of strictly temperate habits; has worked hard all her life, but has generally enjoyed excellent health. From a child has been subject to pain in the præcordial region, accompanied with dyspnœa and palpitations, for which her physician ordered her to smoke tobacco, which habit she has at the present time.

In February, 1848, she lived in a damp cellar in Southac St., where I saw her, suffering apparently from mere debility and fatigue from too hard work; she took no medicine; removal to a better room and a little wine soon restored her. Just before her removal, she, with the rest of the family, partook freely of very gross food, which made them all sick; after free vomiting they all recovered. She remarked to me that nothing ever tasted better to her in her life than that meal; but from that day to the present, a period of two and a half years, she has never had the slightest sense of smell or taste (properly so-called).

From her complaining chiefly of loss of taste, I examined the branches of the fifth pair of nerves in the order of their distribution, expecting to find the lingual nerve, the so-called special nerve of taste, principally affected.

Motion of all parts of the face and mouth was perfect. The fifth pair going to the eyes, nose, ears, and tongue, has more or less influence on the senses connected with these organs. But the sensation of the globe of the eye and eyelids was perfect; no dryness of conjunctivæ and no inflammation of the eye. No symptoms to indicate any affection of the ophthalmic branch of the fifth pair.

There was no dryness of the pituitary membrane; common sensation of the nose perfect, both internally and externally; a foreign body, snuff, &c., excites sneezing as in any one else. Still she cannot in the least perceive the strongest odours, as ether, aqua ammoniæ; these cause an unpleasant sensation, a tickling or a burning, but no sensation of smell; she cannot distinguish ammonia from water except by the general sensation of the membrane, so that here the fifth nerve is not at fault, but the olfactory nerve.

Hearing unaffected; sensation of ear perfect. In the tongue, from tip to base, common sensation unaffected; also on gums and whole buccal cavity; motion of tongue perfect; gums sound; deglutition unaffected. No sense of taste in any portion of tongue, at tip or base; can distinguish between cold and hot drinks; can tell greasy substances by the slippery feeling, but cannot distinguish butter from lard or tallow; can tell salt from sugar by the different sensations produced; cannot distinguish molasses from honey; and cannot taste the smoke of her pipe.

Sensation of face everywhere perfect.

From these negative symptoms, and the fact that tactile sensibility in the whole of the tongue is perfect, it is evident that the fifth pair of nerves is unaffected, and that the whole trouble must be referred to the olfactory nerve.

Here is proof enough that the sense of taste is in a great measure equivalent to the sense of smell. By simply holding the nose and preventing the en-

trance of air by it, sapid substances applied to the tongue are no more tasted than they were by this patient. Thus I found that I could not distinguish the highest flavored perfumes from simple alcohol or ether, when applied to the tongue, when the nose was closed; laudanum and paregoric were the same; the poorest cake was as agreeable as the richest; but all the odour, or what is generally called taste, was immediately perceived on allowing air to pass through the nose. To all intents and purposes, any one can thus destroy his sense of taste at will.

Thinking that smoking might have in part caused the affection of the olfactory nerve, she left it off, though with no relief; she had never passed the smoke through her nose, and she had never taken snuff.

About two years after the commencement of this affection, she had a most violent attack of hysteria, simulating almost every disease, consequent, I think, on the disorder of the system usually attending the cessation of the menstrual function. No particular treatment was directed to the organ of smell, except a single application of electro-magnetism.

I have been led from the above case to the conclusions that there is no *special* nerve of taste; that all our perception of the *flavour* of substances applied to the tongue is due to the sense of smell and the action of the olfactory nerve; that what has been called *taste*, perceived on the anterior part of the tongue by the lingual nerve, and on the posterior part by the glosso-pharyngeal, is nothing but a general sensation of the same nature as ordinary touch.

That the lingual branch of the trifacial nerve has no title to the appellation of "gustatory nerve" any more than has the glosso-pharyngeal; and that neither of these has any more to do with the sense of *taste* than have the branches of the fifth pair, which give ordinary sensation to the nose with the sense of *smell*.

That division of the lingual and glosso-pharyngeal nerves impairs the sense of taste by destroying the general sensation of the mucous membrane, just as division of the fifth pair impairs the sense of smell by affecting the sensibility, secretion, and nutrition of the Schneiderian membrane. Finally, that the olfactory nerve is the nerve of smell and taste, while the lingual and glosso-pharyngeal nerves are nerves of common sensation of the tongue, as far as taste is concerned.

It has been objected to this conclusion that taste accompanies a congenital absence of smell, and that acute taste sometimes exists in persons deprived of smell. In the case alluded to, there was complete loss of smell and complete loss of taste as far as the *flavour* of bodies was concerned; the power of distinguishing hot from cold, acid from sweet, &c., was thought to be owing to the fact that the common sensibility of the tongue, depending on the lingual branch of the fifth pair, was unaffected.

Experiments of physiologists are quite contradictory in this matter of the nerve of taste. Panizza pretends that the hypoglossal and lingual nerves

may be divided, destroying the motions and sensibility of the tongue, while taste remains; and that section of the glosso-pharyngeal totally destroys taste, without affecting motion or sensibility.

Boerhaave ascribes taste to the hypoglossal nerve; Charles Bell and Magendie to the lingual. Others have placed it in the lingual and glosso-pharyngeal, the former presiding over the anterior, the latter over the posterior portion; some have limited it in one place, some in another. If authority were to carry the day, the glosso-pharyngeal, supplying the base of the tongue, where taste is strongest, has more claims to be called *gustatory* nerve than has the lingual.

The common sensibility of the tongue enables us to perceive many qualities of bodies, which combined, and acting on an organ highly acute, naturally or from education, may produce impressions easily mistaken for *true taste*, which perceives the *flavour* of bodies: thus, heat and cold, consistency, form, size, chemical and mechanical action of bodies, are perceived by the common *touch* of the tongue. It is no *special sense* of taste which acts here, but a peculiar modification of *common touch*, to suit the structure and use of the tongue. We see examples in the following, which no one will call special sense, or anything but a variety of ordinary sensibility. We have in the ends of the fingers a delicacy and peculiarity of touch existing in no other part of the body; yet no *special sense*. This is still more remarkable in the flying membrane of the bat, whose sensibility supplies the deficiency of diurnal vision; yet no special sense. The glans penis is the seat of peculiar sensations, but has no special sense. The sensation of being tickled is another modification of common sensibility existing in parts where touch is very dull. If these modifications of common sensibility are found without special nerves, there is no difficulty in comprehending that the tongue may also be the seat of a similar modification, without invoking the aid of a *special sense*, or calling its lingual nerve of common sensation the *gustatory* nerve; and no difficulty in allowing that the only special nerve concerned in *taste*, or the perception of flavours, is the *olfactory* nerve.

Destroy the first pair of nerves, and the Schneiderian membrane is still sensible to irritating vapours by the sensory branches of the fifth pair; and at the same time, the tongue is sensible to similar irritants, by the lingual branch of the fifth pair, while the flavour of bodies is no longer perceived. Now, as careful an experimenter as Magendie maintained that the sense of smell resided in the branches of the fifth pair, because common sensation remained after destruction of the first pair; may it not be, then, that the so-called case or cases in which taste is said to exist where the sense of smell is lost, are in reality only examples of the remaining *common sensibility* depending on the fifth pair, and not of *true taste*. If it be said that the sensations are too acute to be referred to common sensation, it may be replied that, as the common sensation in the ends of the blind man's fingers may be so educated as to enable him to distinguish even the *colors* of bodies (without the necessity of supposing an eye in the finger's end), so the common sensation of the tongue,

in a person deprived of smell and taste, may be so educated as to perceive many qualities of bodies imperceptible by common tongues, and so allow him what he may consider an acute taste, without the necessity of supposing a special sense of taste in his lingual nerves: the blind man's fingers perceive no light, yet they recognize the property of a surface which will reflect one ray, while it absorbs all the rest, thus enabling him to distinguish colors; the tongue, in the absence of smell, perceives not the sapid qualities of bodies, yet by experience can connect (perhaps involuntarily, and in spite of the individual) certain irritating or other properties with substances known to possess corresponding flavours; the former has, to all intents and purposes, *sight*; the latter *taste*. Some cases of alleged existence of taste with loss of smell may depend on obstruction to the entrance of air by the nose, anteriorly, by polypus or other tumours, &c., while odours from the mouth, or the flavour of food, may be normally perceived by a sound olfactory nerve, as taste is the strongest at the base of the tongue, where odours readily can reach the nose. In cases of *congenital anosmia*, we have no standard of comparison which will enable us to judge of the acuteness of taste; never having had the sense of smell, or the perception of flavours, the common sensibility of the tongue can alone be brought into play; whether such individuals have taste, as those do who can smell, neither they nor we can determine.

There is no reason to believe that the sense of smell is of less consequence to man than it is to animals, in the choice of food. It is the fineness of the sense of smell in carnivorous fishes, reptiles, birds, and beasts, which guides them in their choice of food; even savage man, more exposed than his civilized brother, has the sense of smell uncommonly acute; animals distinguish by their nose, and man by his tongue, the qualities of food fit for them; but both by the olfactory nerve. The ruminantia and rodentia, peculiarly exposed to noxious plants as food, have, in the greatest perfection, an organ connected with the nose, which is wanting in man; this is the glandular organ described by Jacobson, situated on the floor of the nostrils, communicating with the mouth, and freely supplied by branches of the first pair; this, according to Cuvier, enables them to distinguish by *smell* the poisonous properties of plants.

Allowing that taste is smell, and depends on the first pair of nerves, we can easily understand why the tongue should be supplied by the lingual and the glosso-pharyngeal nerves. Man, savage or civilized, is liable to eat many things, whose odour might be agreeable, and yet which might prove hurtful. The lingual nerve, therefore, is especially acute, and ministers to a peculiar modification of common sensibility, which rejects substances improper in temperature, consistence, and chemical or irritating qualities; while it is the office of the glosso-pharyngeal to guard the entrance to the œsophagus, and, by a reflex action, to cause the rejection by vomiting of any improper substances which the lingual nerve (and the olfactory nerve, even) may have allowed to pass.

It may here be also remarked that physiology furnishes no instance of the dependence of two senses upon one and the same nerve.

In fine, I must still express the opinion that the above case is strongly in favour of the physiological doctrine, that what is usually called *taste*, or the perception of the *flavour* of bodies, is in reality *smell*; that the *lingual* nerve, which supplies common sensation, auxiliary but not necessary to taste, does not convey *gustatory* impressions to the nervous centre; that these last are conveyed by the olfactory nerve.

Sept. 23.—Carcinoma of Right Lung with symptoms resembling those of Hydrothorax. Case reported by Dr. STORER.—Mr. S. aged thirty-nine, entered Massachusetts General Hospital Sept. 11th, 1850. From the history communicated at entrance, it was supposed that disease of the heart had existed for several years, and that an attack of pleurisy, which he had last spring, while residing in New York, had resulted in extensive hydrothorax of right chest.

There was dulness on percussion in lower two-thirds of right chest, with absence of respiration in same. Increased resonance on percussion in left chest; sonorous r  le; impulse of heart rather increased.

While in hospital he had more or less cough, accompanied by slight expectoration of adhesive mucus. Constantly suffered more or less from dyspnoea, which obliged him to remain at times upright in bed. Respiration varied from 20 to 40 per minute. Pulse ranged from 120 to 140, generally small, feeble and at times intermitting. Renal secretion constantly scanty, though by analysis healthy.

He died on the 21st September.

Upon examination of the body after death, the following appearances were observed:—

Heart.—A slight thickening of mitral value, hardly sufficient to amount to disease.

Lungs.—Nothing abnormal in left lung. Right lung uniformly adherent to pleura and diaphragm by tolerably firm adhesions.

On incision, an encephaloid mass was found, which occupied rather more than the lower two-thirds of lung. The upper third was perfectly healthy, excepting about one inch in thickness adjacent to the diseased mass, where pneumonia evidently existed, the lung being gray and infiltrated with white lymph or pus. The disease was very strongly marked, having a suety appearance, and its limits were very sharply defined. Its upper portion was hard; in other portions where it had softened, small cavities existed, filled with fluid matter; on its edges were found spots of hardened lung, being a sort of granulated lymph or tuberculated matter. In right primary bronchus, disease had extended upon the inside within half an inch of bifurcation of trachea, reducing the bronchus to one-half its ordinary size, and the cartilaginous ridges on its cut edge were seen to be embedded in the encephaloid matter. A large mass existed behind the trachea in the cellular membrane which invests the trachea and larger ves-

sels. In the midst of the disease were found several hardened glands, much enlarged and infiltrated with encephaloid matter.

No disease discovered in other organs.

Dr. BETHUNE alluded to a similar case which came under the care of Dr. Hayward a few years since. The patient had a cancerous testicle, which was removed by Dr. H., and after death, which occurred some time after, one-half or more of the right lung was found in a state of encephaloid disease.

*Sept. 23.—Poisoning by Corrosive Sublimate. Death on the 11th day.—*Case reported by Dr. COALE.—Sunday, July 14th, 1850, called to Mr. J. D. H——, at 8½ P. M.

Found him with pain in limbs, headache, furred tongue, excited pulse, costive. Prescribed submuriat. hydrargyri gr. x.

Monday, July 15th. Called at 12 P. M. Was told that a mistake had been made by the apothecary, who had sent 10 grs. of corrosive sublimate. It had been mixed and partially swallowed, but the great distress it caused produced ejection of much of it from the stomach. By advice of apothecary, warm water had been given. Dr. Flint had been sent for and arrived soon after, and administered the usual remedy of white of egg. He remained with Mr. H. for some time, until he felt it safe to leave, and called again in the morning. I found Mr. H. vomiting a clear fluid like water, mixed with fresh blood, and suffering much pain in the region of the stomach. Taking it for granted that Dr. Flint in his two visits had administered all the antidotes required, I took measures to combat the immediate symptoms occasioned by the corrosiveness of the poison, giving twenty drops of laudanum and recommending ice cream. In the evening, found the vomiting had ceased and the patient very comfortable.

Tuesday, July 16th. Called early in the morning to Mr. H., who had had a violent hiccough nearly all night; recommended sulph. ether; visited him about 9 A. M. Hiccough returned at every attempt to swallow fluid. Patient otherwise comfortable. Pulse a little excited. Skin moderately cool. Tongue coated. Bowels not moved. For the hiccough, prescribed musk. Gave magnesia for the bowels.

Wednesday, July 17th. Hiccough still troublesome. Eruption of variola appearing. Magnesia had acted well. Tongue still coated. Skin cool. Pulse 80, regular. Blister to nape, to remedy hiccough. No other treatment.

Thursday, July 18th. Night tolerably good; hiccough ceased. Eruption more decided; promises to be thick about the head and around the nose. No fever; tongue cleaner. Had vomited once before breakfast; the matter was of a very dark brownish colour. I thought without doubt it was blood; demulcents and opiates prescribed; the latter only if necessary. In afternoon found him at a distant part of the room, sitting with a basin before him in the act of vomiting. He said it was only caused by the fluid meeting the wind in the

stomach; vomited matter free from blood. This was the only vomiting since the morning.

Friday, July 19th. Felt better he thought; skin cool; tongue clean; pulse 80; vomited once just after taking breakfast; but no blood; some bile with the ingesta.

Saturday, July 20th. Vomited four times; complains of exhaustion; pulse 76; skin very cool; tongue clean. Eruption going through its regular stages; thick on the head and confluent, in several instances to the extent of five or six pustules; comparatively little on the body; nose much swelled and uncomfortable from the number of pustules on and around it; treatment, ice and demulcent drinks, with opiates at night.

Sunday, July 21st. Has vomited six times in the last twenty-four hours, rather copiously; the ejecta tinged with black bloody matter, mixed with some bile. Complains of an intense distress through chest when swallowing and at other times; skin very cool, almost unnaturally so; pulse 76, regular; tongue clean. No urine has been voided since the last Sunday, one week; no distress connected with this symptom; mind perfectly clear, though he wanders much in sleep; very restless both sleeping and awake; treatment continued.

Monday, July 22d. Symptoms unaltered; strength not remarkably less; eruption beginning, irregularly and partially, to dry.

Tuesday, July 23d. Vomiting more frequent; strength perceptibly diminished, restless; skin unnaturally cold; tongue clean; pulse 76; distress through chest increased; no sore throat; no pain in abdomen; no tenderness on pressure; no urine passed; bowels evacuated; discharges very black, thin; others thin but not unhealthy.

In afternoon no improvement. Feeling uneasy about him, saw him again at 10 P. M.; found vomiting not abated; prescribed olive oil and mucilage, with opiates.

Wednesday, July 24th. Symptoms not altered except increased in severity, especially the agony in the chest; strength evidently failing; requested consultation with Dr. Bigelow. Met him at 1 P. M.; treatment not altered; in evening some apparently slight alteration of symptoms.

Thursday, July 25th. Had only vomited once since last night; distress still unabated; other symptoms much as before; a slight improvement in his appearance.

Called in the evening at about 5½, found him dead.

Post-mortem examination at 8.

Some portions of the epithelium of the œsophagus were found removed, but Dr. J. B. S. Jackson thought that no importance could be attached to this.

The prominent point of interest in the case was the length of life after taking the poison. The entire suppression of urine; the cleanness of the tongue; the coldness of the skin; the absence of fever; of tenderness over the epigastrium, of frequency of pulse, also of any appreciable lesion after death.

Oct. 14.—Poisoning by Corrosive Sublimate. Death on the 13th day. Case read by Dr. JACKSON, observed by Dr. CHAPLIN, of Cambridgeport, having occurred ten years ago.—The patient was a married woman, twenty-five years old, who took one teaspoonful of corrosive sublimate with laudanum, for a suicidal purpose. She took the poison at about eleven o'clock A. M., and was found at about one, in the privy, vomiting and purging, with constant retching. There was pain in epigastrium, and a sense of burning and smarting in the throat. The symptoms continued gradually improving for four days, when she became able to keep down drinks, and was sufficiently comfortable. Continued confined to her bed for about a week, and Dr. C. thought she would recover; took farinaceous food, pulse 40, weak, bore pressure on epigastrium. On the eleventh day, she became worse; there being distress and restlessness; no return of vomiting, but some looseness of bowels with pus in dejections. Sank, and died on the 13th day. There was never any fever; was very pale, cool, with a look of prostration. Did not complain of debility till after the week of relief, i. e., the eleventh day. Condition of urine not noted. No autopsy allowed. The quantity of poison taken was, according to apothecary, sufficient for a pint of rum to be used as bed-bug poison.

Dr. C. E. WARE remarked that he had seen a case of poisoning by this substance, in which dysentery came on after the disappearance of the primary symptoms, causing the death of the patient on about the fifteenth day.

Oct. 14.—Fracture of the first Lumbar Vertebra. Case reported by Dr. H. J. BIGELOW.—A female, nineteen years of age, had, in the latter part of May, jumped from the second story window of a house, a height of twenty feet from the ground, alighting upon the nates. She was at once rendered paralytic in the lower extremities, losing all power of action, and all sensation, with complete paralysis of both sphincters. Upon examination, there was evident projection of the lower dorsal vertebræ.

At the expiration of a fortnight she recovered somewhat the power of retaining the discharges, while sensation partially returned in the limbs; yet, by the end of the succeeding week, when sensation was natural, there was no ability to move the legs.

Another marked symptom, from the first, was pain in and below the knees, excessive at toes. The bowels were constipated; while catharsis produced by medicine caused great pain, followed by prostration.

In September, the patient could move the right limb considerably, but had lost flesh. At about this time was attacked with diarrhoea; which could not be easily restrained by remedies. This continued, together with great occasional pain in the abdomen, extending sometimes to the præcordial region, and probably partly due to the lesion of the vertebra, until death.

During the month of December, the patient was attacked with pain under the left clavicle and left shoulder, and accompanied with the usual physical signs of tubercular deposit; and from this time she gradually failed; the cough

increasing and loose, night sweats supervening, emaciation progressive, diarrhoea continuous, attended with pain in the abdomen; appetite well; the pain in the legs occasionally severe.

The local sensation seemed to be natural, but the power of motion not increased in the legs. The patient died in February, about eight and a half months from the occurrence of the accident.

Autopsy twelve hours after death.—Head not examined. In *left lung* were found three or four large cavities; and miliary tubercles existed in the upper part, and throughout *right lung*. *Heart* normal. Scattered throughout mucous coat of *small intestine* were patches of inflammation varying in length from half an inch to an inch. Several small ulcerations were found near its commencement, and a single tubercle of the size of a small pea. In *large intestine*, from ileo-cæcal valve to descending colon, mucous coat highly injected, abnormally thickened and rugous. From cæcal valve to a distance of twelve inches, nearly the whole surface was in a state of ulceration. *Liver* slightly fatty; *other organs* normal.

On examining the spine, the body of the first lumbar vertebra was found to be completely crushed anteriorly, so that the adjacent vertebræ came together at their anterior edge, giving rise to considerable antero-posterior curvature and protrusion of the spinous process. The body of the same vertebra was thrust backwards in fragments upon the spinal cord, compressing it, and obliterating the canal in half its diameter. The abdominal periphery of this vertebra was also surrounded with a ring of callus, of about the thickness of a quill, and which served as a sort of splint to the adjacent vertebra. The last dorsal vertebra presented upon its superior and inferior surfaces a split or crack of a T shape, completely traversing its substance; while the second lumbar vertebra was slightly chipped upon the upper and posterior concave edge of its body.

Oct. 14.—*Extirpation of a Horn from the forehead of a woman aged eighty-two years, with a description of the case by the operating surgeon, Dr. SOUBERVIELLE, of Paris.*—Dr. J. B. S. JACKSON exhibited the wax model, belonging to the College Cabinet, of the head of a woman with a horny excrescence, from eight to nine inches in length, growing from the forehead. A model of this peculiar case is to be found in several other museums of the country. The following is a description of the case as given by Dr. Soubervielle, the operating surgeon.

“Madam Dimanche, widow, aged eighty-two years, laundress, living in the rue de Bercy, Faubourg St. Antoine, noticed, six years since, a small wart upon the forehead, just above the right eyebrow. This excrescence gradually became elongated and enlarged at its base, the skin over its summit having a dry, earthy appearance. As this vegetation developed, it presented a corneous appearance, and at the end of six years from the time it was first observed it presented the appearance of a ram’s horn, being at least twenty-five centi-

metres in length, from three to five centimetres in diameter, and curved in its lower two-fifths, having a blackish-brown aspect, being deeply striated lengthwise, and of considerable weight. Its tissue was dry and brittle. One of the members of the Royal Academy of Medicine in handling it with too little care broke off its point, the interior appearing solid, compact, and its tissue corneous.

"The base of the horn was implanted in the skin of the forehead, which there presented a small circular neck, the tumour having nothing in common with the frontal bone. This circumstance rendered the weight of the horn extremely fatiguing to the patient, who, to obviate this inconvenience, had constructed a linen case, in the form of the tumour, which was encased within it, the base of the sheath being fastened to her night-cap band.

"I performed the operation of extirpation by making a circular incision around the base of the tumour, and raising from it the portion of skin adherent to it. There was no arterial hemorrhage. I covered the wound with a bit of agaric and it healed readily, almost without supuration.

"A curious fact in connection with this case is that this patient had previously had a tumour of the same nature just above the thumb, which was removed by Dr. P——. She had also at the time of the last operation an excrescence from four to five centimetres in diameter, and of the length of the little finger, attached to one of the cheeks by a narrow pedicle, and which she removed herself."

Paris, March 12th, 1845.

Oct. 8.—*Gangrene of Appendix Vermiformis. Hardened Fæces found in its cavity.* Case reported by Dr. STORER.—The patient was a boy twelve years old, under the care of Dr. Cutter. Was taken on Friday, Oct. 16th, with symptoms of peritonitis. Dr. Storer saw the case in consultation on Friday last. He was lying on his back, with the knees drawn up, suffering from extreme pain in region of umbilicus, and from dyspnœa; with great tenderness over the whole region of abdomen. Had had no operation since Sunday. The patient died on Friday, the day of Dr. Storer's visit, after one week's illness. On examination after death, there was found gangrene of the appendix cœci, and, contained within its cavity an oblong, oval mass of hardened fæces with several short pieces of hair running through it; no perforation had taken place. There was general peritonitis, with a purulent deposition in the cavity of the pelvis. The omentum was very purple and also that portion of the peritoneum that lines the external walls of the abdomen. The fæcal matter contained in the appendix was quite hard, and in layers, compared by Dr. Cutter to some calculi he had seen.

Dr. BIGELOW remarked, that two questions naturally suggested themselves in regard to these cases; 1st, why certain foreign bodies should in some instances find their way into this cavity, and not in others; and 2dly, why such bodies should, in certain cases, produce inflammation of the part, while

in others they remain for years in this cavity, without producing any morbid results.

Dr. B. alluded to two cases, in one of which, two calculi were found in the appendix, which must have been there for a considerable time before the inflammation came on, which proved fatal to the patient. The other was the case of an eminent physician who died at an advanced age, and in whose appendix were found a large number of shot which had been accumulating there for years, without being followed by any morbid consequences.

Oct. 28. *Intermittent Fever, originating in Boston.* Case reported by Dr. THAYER.—A boy, twelve years old, who had been previously in good health, was on the common during the display of fire-works on the evening of Sept. 18, 1850, sitting on the ground. The air was very cool, and a fog prevailed during the evening. The next day, in the afternoon, he had a moderate chill, followed by heat and then sweating. On the third day (Sept. 20th) the chill and heat were more severe, and were repeated daily, at regular times, for ten days before advice was obtained. On the 30th Sept., Dr. T. saw him, and learned that his chill began at 5 P.M. and continued with severity till 6½, when extreme heat came on, and lasted until 11 P.M., at which time it was superseded by sweating, which continued through the night. The paroxysm was attended with severe pain in head, neck and back. During the remainder of the day, there was complete intermission, and with the exception of a degree of debility, there was no complaint whatever. Indeed, during most of the time, he had been at school as usual.

The child had lived in that part of Eliot street lying between Washington and Tremont streets, since he was six months old; and for ten years he had not been out of Boston over night; and had never in his life been farther than Dorchester.

He took sulphate of quinia, gr. 4½, daily. On the second day of the treatment, the paroxysm was not attended with pain, although the pain was present again on the third day. On the third day, the paroxysm was shorter; on the fourth, heat and sweating, without chill, and with very little pain; and from this time there was no appearance of the paroxysm whatever. On the fifth day, the sulphate of quinia was increased to 8 grains daily, and continued for four days longer.

Up to the present time there has been no return of the affection, and the child has been as well as ever.

Nov. 11. *Excision of Superior Maxillary Bone. Result unfavourable.*—Dr. S. PARKMAN exhibited the removed portion, showing a peculiar disease. A tumour had formed in the antrum, destroying by pressure the superior and posterior walls of this cavity, protruding into the cheek, and incorporating itself with the substance of the masseter muscle. In its progress, the orbital edge and the zygomatic process were destroyed by erosion, but the bone did

not participate in the disease. A cut surface showed the structure white, and presenting fibres arranged side by side, with the appearance as seen in a common wart. The centre of the tumour was entirely disorganized, being diffuent and highly offensive. The tumour was not cancerous, and a microscopical examination showed the tissue to be composed of epithelial scales, making it probable that the disease originated in the mucous membrane of the antrum.

The patient was a man sixty-two years of age, who had suffered six months from a swelling of the right side of face, with very acute pain. Previous to the operation, the seat of the disease presented a smooth tumour extending from the temporal region to the lower jaw, measuring $5\frac{1}{2}$ by $4\frac{1}{2}$ inches in its two diameters, firm and painful on pressure, and causing, of course, great deformity. Enlarged veins were ramified over the surface, but these were only an exaggeration of a natural condition existing on the other side. There was no protrusion into the mouth; the teeth were all absent, but from the socket of one a small fungus protruded, and a probe passed into this opening traversed the antrum, and made its appearance in the nostril, whence there was a profuse, fetid, puriform discharge, obstructing the passage of air.

The operation was performed by a single first incision from the temple to the angle of the mouth, and a second, dividing the upper lip to the nostril; the flaps were dissected from the surface of the tumour and the bones divided by cutting forceps. After removal of the principal portion, the disease was found to have extended backwards towards the base of the skull involving the pterygoid process, &c. It was not thought advisable to pursue the dissection in this direction, and the actual cautery was freely applied. The wound was united by sutures, &c., and healed almost entirely by the first intention, the patient doing very well, until the eighth day, when there were symptoms of a pneumonic affection, and the patient died on the eleventh day. The post-mortem examination showed a pneumonia of the right lower lobe, the disease presenting some of the characters of the affection arising from purulent absorption, the inflammation concentrating itself in spots, which exuded a grayish pus on pressure.

ART. IV.—*Subclavian Aneurism successfully treated by Ligature of the left Subclavian Artery; with an account of the appearances on dissection a year afterwards.* By J. MASON WARREN, M. D. [Communicated to the Boston Society for Medical Improvement.]

THE account of the operation in this case was originally published in this Journal for January, 1849. The patient died a year after the operation, being worn out by a confinement of three months with typhoid fever. In order to

a full understanding of the appearances observed at the dissection, a brief abstract of the case will be required.

The patient was a female, thirty years old, of a delicate constitution. I saw her for the first time, in December 1847, on account of a small aneurismal tumour, the size of a pigeon's egg, placed just above the scapular end of the left clavicle. She stated that four months previously, while making the effort to extract a cork from a bottle, she felt a sudden crack at the spot where the present tumour is situated. No enlargement was noticed until some days afterwards, since when it has been gradually increasing. At her first visit to me, it had a powerful pulsation, and possessed the usual thrill of an aneurismal affection.

On an examination of the neck, the subclavian artery was not to be found in its normal situation beneath the clavicle, but after a long and critical manipulation, it was discovered running in an oblique direction across the neck, parallel with the edge of the trapezius muscle, and in company with the cervical plexus of axillary nerves. The first and part of the second rib could be distinguished above the clavicle.

The operation was performed on Dec. 24th, 1847, the ligature being applied to the vessels, between the scaleni muscles. The pulsations in the aneurismal swelling immediately ceased, and all appearance of tumour disappeared. The pulsations in the artery at the wrist returned on the second day after the operation, though feebly, but in the course of a few days they were fully re-established. The ligature did not separate from the artery until the ninety-sixth day, notwithstanding repeated efforts were made to detach it.

On September 14th, nine months after the application of the ligature, I saw the patient. She was then quite well, had recovered the use of the arm, and was in no way incommoded from the effects of the operation to which she had submitted. The aneurismal tumour had in a great measure disappeared, though more prominent than immediately after the ligature of the vessel. It still conveyed the impression to the touch of containing a fluid. On its surface was a large arterial branch, so incorporated with it as at first to give the idea of a return of pulsation in the whole mass, but which by more careful examination could be separated from it. The pulse at the wrist still remained less strong than in the corresponding artery of the other side.

She was subsequently seized with typhoid fever, from the effects of which she died, after an illness of three months.

As she lived out of town, I did not learn of her death until the following morning, when Dr. Brown and myself went out immediately, and requested an examination, which was readily granted. The corpse was already prepared for interment, so that it was impossible to make any preparatory injection for the more satisfactory inspection of the collateral circulation, which in a case of this kind would have been highly desirable.

The body was in the most extreme state of emaciation. The sternum, which was deformed, was excavated in such a manner that the posterior por-

tion projected backwards, and was in contact with the left side of the spinal column. The lungs were in a high degree emphysematous. On the neck was seen a scar, an inch in length, at the spot where the incision had been made in the operation. No tumour or other marks were observed at the point formerly occupied by the aneurismal sac.

The skin, cellular membrane and fascia being removed, the vessels and nerves were at once exposed, on account of the great absorption of the adipose substance. The subclavian artery, from its origin to the internal edge of the scalenus anticus, maintained its original size; but here it suddenly terminated. From this spot to the aneurismal sac was extended a flat cord, an inch and a half in length, seeming to be composed of little more than condensed cellular membrane. The aneurismal sac had contracted to a bulbous form, and was about twice the size of the vessel in its normal state; the enlargement suddenly ceasing at the point where the artery is embraced by the two heads of the median nerve, and the vessel regaining its natural size. On its surface was the supra-scapular artery, in this case a branch of the transverse cervical, greatly enlarged, and which gave rise to the apparent pulsations in the tumour before death.

The vessels forming the thyroid axis were twice their natural dimensions. The internal mammary was enlarged, and given off from the thyroid; it was through this, by means of the inosculations of the intercostals with the thoracic, and the posterior scapular with the subscapular, that the collateral circulation had apparently been accomplished.

Boston, Oct. 31st, 1850.

ART. V.—*Two Remarkable Cases of Abstinence.*—By Dr. JULIUS S. TAYLOR, of Carrollton, Montgomery Co., Ohio. (Read before the Montgomery Medical Society, November, 1850.)

CASE I.—Mr. B. H——, aged 50, the father of a large family, had always enjoyed good health, and had been an industrious and active man. He was given to speculations, in some of which he had been successful, in others had lost. His losses, however, preponderated to such an extent that in the year 1841 he found himself nearly reduced to bankruptcy. His creditors became uneasy, and “pushed him”—which harassed him exceedingly. He lost his appetite; bowels became costive; skin yellow and dry; tongue relaxed and buffy-coated; pulse small and irregular. In connection with this train of symptoms, he became melancholy and strange in his behaviour, which, in the estimation of some of his most intimate friends, was looked upon as affectation or wilfulness. These symptoms having continued for several weeks, his anxious wife became alarmed, and sent for me as his medical adviser. I

visited him on the 7th day of February, and found his general appearance as above stated, and further, a great unwillingness to converse with strangers, or even with his family. With me, however, he conversed quite freely, and gave me a satisfactory answer to all questions in reference to his situation; assuring me, however, that my examination was useless, "as medicines would never do him any good." I became satisfied that his disease was purely mental, and advised, at once, an effort to be made to obtain a place for him at our noble State Lunatic Asylum. But upon the correspondence of some friends with the then worthy superintendent, it was found to be impossible to gain admission for him.

During the time occupied by the correspondence, I instituted such treatment as the symptoms seemed to indicate, and continued them for a few weeks, until it seemed to be absolutely nugatory, when I discontinued, and gave only advice in the way of persuasive treatment. During this time he became unwilling to converse with any person but myself, and in the month of February ceased to speak even to me. He then began to lessen his food, yet his general symptoms had changed but little, if any; and after a few days he ceased to eat or drink for ten successive days and nights. Neither persuasion, tears, nor threats, could induce him to eat or drink during that time. On the tenth day I visited him, and after talking for an hour, and asking many questions, all without the least answer or change of countenance, I then proposed to drink a glass of water with him. To this he at once consented, but said that "it must come directly from the spring in a bucket." The water was brought, and upon my proposing to drink a glass with him, he said, "You drink a glass full, and I will take the bucket." He put the bucket to his mouth, and did not take it away until he drank a little over half a gallon! This large draught of cold water produced a most violent chill, during which I proposed to him to drink some wine, to which he consented, provided I would drink "a teacupful first." It was a large dose for me; but still duty said drink, and I did; and he then drank another. The chill soon subsided, and I urged him to eat some food. This he resolutely refused to do, but agreed to visit my house the next day in a carriage, and dine with me upon "turkey."

According to agreement, his friends brought him to my house, and when dinner was ready he was seated at the table, but refused to eat. I suggested to a friend to help Mr. H., as he was feeble, and he would eat. Upon that suggestion he was helped, by putting the food to his lips, which he readily took in, after the first offer, which he resolutely refused for some time. At this meal he eat heartily of turkey, potatoes, bread, coffee, and some pie, without speaking a word, or refusing anything, until I thought he had been bountifully supplied, for the time.

During the ten days' abstinence he walked occasionally around the house, and his countenance was unaltered. His bowels had been moved once or twice during the time, and he passed urine also. He did not groan or com-

plain in any way; nor did he speak, or seem to notice anything that was passing in his family. While he was at my house, I endeavoured to divert his mind and excite him to speak, but did not succeed. After waiting a reasonable time after dinner, his friends *put* him into the carriage and returned home with him, and left him exhibiting the same fixed determination not to eat, drink or speak.

From that day he again desisted from food, or drink, or speaking for *fourteen* successive days and nights: during which time he appeared not to be weakened; nor did he present a feverish or excited appearance. His bowels were evacuated but once during the time, and he passed urine only three times. He slept generally well, and could be removed, or would move himself when asked so to do, and walked around the room occasionally during the daytime. On the fifteenth day, he yielded to the solicitation of his wife, and drank a small quantity of water, and walked up stairs to a more convenient room; and after a few days, spoke a few words to his wife, but again refused to talk to any person, or observe anything that was passing around him. Yet he would drink a little water with some milk in it; but not more than a gill a day, to the greatest extent, and oftentimes refusing this for several days at a time. This state of affairs continued, in spite of the anxious solicitations of an amiable wife and children, and all that kind friends could invent for his relief, until his death, which was on the 19th of May; he having lived about one hundred days in an almost constant state of abstinence.

During the above period, I called upon him, and recommended what, under the circumstances, seemed to be advisable. I had him taken to ride occasionally, when it could be done without too much force; gave him an injection of demulcent articles when this could be accomplished; sponged his body over, and oftentimes tried to give internal remedies, but always ineffectually. He did not seem to have lost his reason, however, to any great extent; or, at least, his friends so thought: but he had a fixed determination to die, if possible, by abstinence.

During the period which elapsed after his last total abstinence, until his death, he did not present any symptoms of pain or disease. His eyes were as bright as usual; his skin cool and natural: his urine was evacuated every ten days; but his bowels were not moved oftener than once in from eight to fifteen days, and then but very slightly. His flesh, which, when he was taken, was moderate, he weighing about 165 pounds, continued to diminish gradually until he was a perfect skeleton. He walked around the room occasionally until three or four days before his death, when he laid down and slept, and waked, without any change in the appearance of his eyes, until he died like one going to sleep.

CASE II.—The next case is that of Mr. J. S——, aged twenty-six years. He had been a steady and very industrious person during his life; always attending to the directions of his parents and elder brothers, as their govern-

ment was extended over him. His health had been good during his boyhood, which enabled him to perform all the various labours incidental to an agricultural life. After his father's death, he went to learn the carpenter's trade, at which he continued until his last illness, enjoying good health, except for a few days in the year 1849, when he consulted me for a disturbance of his bowels, which soon passed away. He showed at the time, however, slight mental derangement for a few days.

In the month of January, 1849, he consulted me again, in reference to pains in his bowels, and slight headache—pupils of his eyes considerably dilated, and presenting some slight appearance of mental derangement, which appeared in his singular questions, &c. I prescribed for him, with apparent relief and satisfaction, several times, until he supposed himself well. I did not hear from him again for several weeks, when I was summoned to see him at his residence. Found him with slow pulse (65), irregular, and having a chill, followed by fever every other day; pupils dilated, bowels costive, and urine scanty. After prescribing, as I believed, appropriately, these symptoms subsided, and were followed by strong emotions of *fear*, mostly of dogs, and marked mental derangement. For the relief of this, appropriate remedies were prescribed, and immediate application was made to the superintendent of our State Lunatic Asylum for his admission there. But it was found; at that time, he could not be admitted. I gave him such remedies as the case seemed to require, until it appeared to be hopeless, when I left him under the charge of a most careful mother, and brothers, and sisters, all of whom were assiduous and devoted in devising and applying all things for his relief and cure. His mental derangement increased; he became restless, and exceedingly fearful, frequently imagining dogs to be chasing him, when, one day, in the momentary absence of friends, he plunged headforemost through the window of an upper story, and fell about twelve feet to the ground. He did not suffer from the fall, and he continued as before, gradually becoming more averse to moving, until, when the family thought it proper for him to take a ride, they had to employ force. He now began to lie continually in bed, without talking, and eating only a little once in about two days, and drinking a little water. He spoke but few words, in a feeble voice; pulse quick; skin cool; gave no signs of pain or sickness; his flesh gradually wasting away. This state of affairs continued until fifty-one days before his death, when he positively refused to eat or drink; which determination continued for twelve successive days and nights, and then he asked, with a good voice, for some water. A little was given him, which caused him to vomit; but, after trying it a few times, it remained on his stomach. From that time, for thirty-nine successive days, he drank a very small quantity of water, not to exceed one gill in twenty-four hours, but did not taste one particle of food during all the time; thus having lived one year, eight months, and sixteen days, in an almost perfect state of starvation, and fifty-one days without food of any kind. He died on the 29th of September,

1850. For the last seventy-two days prior to his death he had no fecal evacuation, but passed urine in small quantities every three or four days.

Cases of long-continued abstinence must be of exceeding rare occurrence, for I find but four cited in all the numbers of that valuable record of our science, *The American Journal of the Medical Sciences*, from beginning to end. The first case is in vol. vi., page 543, of a young man, who lived fifty-four days on water alone. The second case is in vol. ix., page 499, of a criminal, who lived sixty-three days upon water, but had convulsions, &c. The third case is in vol. xvii., page 479, of a female, who is said to have lived a year on water. The fourth case is in the New Series, No. xix., page 172, of one who lived ten days. In vol. x. of the *Eclectic Repository*, page 326, I find a case reported as remarkable for the patient's preservation after an abstinence of twelve days. In *Good's Study of Medicine*, vol. i., page 84, I find quoted several cases of very long abstinence—one of fifty-two days, one of sixty-one days, and others which are said to have existed even for years, on water alone.

These cases, as well as those reported by myself, prove the inaccuracy of the vulgar belief that a person cannot live beyond nine days without food or drink.

[*Remarks by the Editor.*—The preceding cases are extremely interesting, and are among the most remarkable for the length of time that abstinence was borne that are to be found in the annals of our science. It is a curious problem, but one which does not admit of any precise solution, what is the extent to which abstinence can be carried. Numerous instances are on record of abstinence for an extraordinary length of time; and although many of these are indebted for the credit they have obtained to the love of the marvellous, natural to the human mind, there are others, sustained by such satisfactory evidence, so carefully observed, every source of error guarded against, that we cannot refuse them our belief. THEVENOT asserts that the Arabs can remain five days without food; and others that the Tartars support abstinence for fifteen, sixteen, and even seventeen days. A woman survived nearly eight days, buried in the snow without food. (OKES, *Duncan's Annals*, iv. 500.) A young man, confined in a coal-pit, by a sudden burst of water into it, remained twelve days without any other sustenance than a little water, which trickled down a rock and was collected by him in the hollow of his hand. (T. T. GRIFFITH, *Lond. Med. and Phys. J.*, Feb. 1830, and *Eclectic Repository*, x. 327. Philadelphia, 1820.) A woman who lost her way in a coal-pit remained for eighteen days without any nourishment except a little of her own milk for the first three days, and water subsequently. (RANKINE, *Annals of Med.* viii. 492. Edinburgh, 1804.) A maniac in the Lunatic Asylum at Montrose often abstained from every kind of food, both solid and liquid, for fourteen days in succession (*Ann. of Med.* v. 383), and PLOT speaks of a melancholic person who fasted for the same period. CHEYNE states that a phthisical patient lived thirty days upon water with a little nitre dissolved

in it. (*Diseases of body and mind*, p. 109.) Dr. FRANCIS quotes the case of a negro woman who, supposing herself affected with *Obi*, refused all sustenance for seven weeks, during all which period she took for her support only about two cups of water slightly medicated with wine. (*New York Med. and Phys. Journ.* for 1823, ii. 21.) A young woman whose case is recorded by Dr. ECCLES (*Med. Ess. and Obs.* v. art. xliii.), was affected with spasms of the œsophagus to such a degree as to be unable to swallow, and remained thirty-four days without taking any nourishment. The spasms then abated, and she continued to take some food for about three weeks, when the spasms returned, and for fifty-four days she was unable to eat or drink. In a case related by Prof. M'NAUGHTON, a man lived fifty-four days on water (*American Journ. Med. Sci.*, vi., 543); and in another quoted by VALISNIERI, the patient lived for seventy-six days. BORELLI (*Cent.* iii., *Obs.* 35) gives an account of a case in which abstinence was continued for three months, and MERCARDIER (*Journ. de Méd.* xxiii., 133) quotes another, prolonged for six months. Many instances of even more protracted abstinence are recorded. SCHMALS relates two cases, one of a female who lived two years and a half without food or drink, and another, a female also, who was still alive at the period of his report, and who had not eaten or drunk for six years. (See *Am. Journ. Med. Sci.* for Nov. 1833.) In a case related by VANDERMONDE (*Journ. de Méd.* xiii. 158), abstinence was protracted for twenty-six years; but the most extraordinary of all is the one related by the Rev. Mr. STEILL (*Med. Essays and Obs.* v., art. xlv.), in which the patient lived for fifty years, upon a little whey, or milk and water. HALLER has collected many cases of this description, and a still greater number have been recorded by subsequent writers. The cases, however, we have alluded to, most of which have an appearance of authenticity, are sufficient to show that it is utterly impossible to fix the limits to which abstinence in the human species can be carried.

The experiments of MAGENDIE on animals, belonging to genera near to man, show that they cannot support abstinence beyond fourteen or fifteen days. Some large dogs, however, subjected to abstinence by M. COLLARD DE MARTINGY, lived three, four, and five weeks, and even longer. This last experimentalist also found that the younger the animal the shorter was the time that they could support abstinence; and the smaller the animal, whether of the same or different species, the shorter the period they could live without food. Of some capons subjected by REDI to complete abstinence from food and drink, none lived beyond the ninth day. One of these animals, however, to which he allowed some water, lived to the twentieth day. (*Dict. de Méd.*, 2d ed., i. 286.)

Most of the remarkable cases of abstinence we have cited, and the greater number of all those recorded by writers, were in sick persons; and daily observation shows that abstinence can be supported with greater ease in sickness than in health. Of all diseases, insanity and melancholy allow of the most protracted fasting. It is in hysteric or melancholic girls that instances of the

longest abstinence have occurred. Hard study, the ardent pursuit of objects, love, ambition, exalted devotion, all powerful excitements of the brain, cause a forgetfulness of the wants of reparation. It is reported of Sir Isaac Newton that when immersed in his studies he would forget his meals. Sleep is also favourable to protracted abstinence; it is well known that hibernating animals, as the marmot, &c., live without food during a whole season.

It may be laid down as a physiological axiom, that the more actively the organic actions are performed the more urgent and imperious will be experienced the necessity of reparation. Hence in early life abstinence cannot be borne so well as at a more advanced period. Hippocrates observed that the younger a person is the more irresistible is the sensation of hunger; and the experiments of Collard de Martigny, as we have already stated, show that the younger the animal the sooner it dies from privation of food.

Women appear to support abstinence better than men, since we find more instances of prolonged abstinence in the former than in the latter. This may arise from women, generally, taking in health less food than men, and from their suffering less loss by secretions, in consequence of their less active life.

Cold would seem to be very favourable to prolonged abstinence, by its lessening all the organic actions, and abating the losses by perspiration, &c.

Moisture has also been supposed to be favourable to the prolongation of abstinence, in consequence, as some think, of absorption taking place in the lungs, and, according to others, from the skin. Be this as it may, the length of time which persons confined in damp places have endured abstinence, seems to support the idea that moisture is somehow favourable. Various other circumstances, as the constitution of the individual, and his habits, the seasons, &c., exercise an influence upon the duration of abstinence; but we are not in possession of a sufficient number of facts to enable us to determine positively their precise effects.

For much further information on this subject, we refer to the article ABSTINENCE in the *American Cyclopaedia of Practical Medicine and Surgery*, edited by Isaac Hays, M. D.]

ART. VI.—*Observations on Typhoid Fever and its complications, as it prevails in the town and vicinity of Mount Vernon, Indiana.* By W. H. BYFORD, M. D.

TYPHOID fever has been prevailing more or less extensively in our neighbourhood for three or four years, in connection with various endemic diseases. The earlier cases were less complicated and milder than those which have more recently occurred.

The most frequent subjects of the disease were young and apparently

healthy men; during the early period of its prevalence females were rarely attacked, and children under twelve years of age were almost exempt. For the last two years, however, all ages, both sexes and every condition have been seized with it. As a general rule, however, it is far more likely to attack young and robust persons than either the old or very young, and the severity and fatality with which it runs its course are augmented in proportion to the approach to the former condition.

The phenomena of typhoid fever have been so fully described, and are so familiar to every physician, that it will be only necessary here to give the characteristic features presented by the disease as it prevailed among us, and this we shall do in order to enable the reader to judge as to the value of the views we shall set forth respecting its treatment.

The onset of this fever was not characterized by any peculiarity. The disease sometimes commencing very suddenly, though generally more gradually, was ushered in by rigors more or less severe, alternating, perhaps, with heat. Headache, vertigo, nausea, with or without vomiting, are often among the early symptoms. In established cases, the patient appears somnolent and listless, with an expression of dejection and even despair depicted upon his countenance. The face is flushed and of a dingy dirty colour. The eye lustrous, yet sleepy. Sometimes the patients are vigilant, talkative and restless. Mental hallucinations with stupor were frequent though not constant symptoms. Whatever may have been the mental manifestations early in the disease, stupor, more or less profound, exists for some time prior to death, where this was the finale of the case. Headache, boneache, and many other wandering and vague painful sensations are present in most instances, accompanied in the course of the disease with muscular debility and tendinous twitchings—merely subsultus generally, but occasionally amounting to choreal grimaces and gestures, and still less frequently to violent tonic contractions of large numbers of muscles, placing the body in constrained and unusual positions. In other cases, general convulsions are observed. The headache when present is generally severe in the onset, but during the advance of the malady subsides, leaving the patient free from this species of suffering. The temperature of the surface varies from burning heat in the commencement to coolness, and sometimes absolute coldness. The skin, ordinarily dry and dirty looking, is very prone to become suddenly wet with its own secretion, soon to become again arid. The pulse is nearly always above the natural standard, numerically, and as uniformly below it in firmness; sometimes full but soft.

The alimentary canal always exhibits manifest signs of disorder. The tongue is coated in the commencement with a thick whitish mucous covering, often yellow towards the root—leaving the tip and edges only naked, which are of a fiery red colour, and disposed to crack and become sore.

In the advanced stages this red border gradually encroaches upon the coated portion, carrying the covering before it, until the whole tongue is of a deep

scarlet hue, dry, raw, cracked and sore; while sordes begin to collect about the teeth and gums, and tenacious mucus, rendering the mouth clammy and offensive to the sufferer. At other times the white or yellow fur on the tongue becomes black, as if stained by charcoal. Sickness at the stomach and vomiting, in a majority of examples, usher in the attack; but they seldom last for more than a few days, and are accompanied and succeeded by urgent thirst for cool and acidulated drinks. The bowels, usually costive at first, after a few days—from one to five—become loose and irritable, the discharges are large, serous, and generally green, and occur not unfrequently as often as every hour, though generally once in two hours. Although costiveness is generally present in the onset, diarrhoea does occasionally come on with the fever. This diarrhoea is by far the most obstinate symptom that presents itself, lasting throughout the entire progress of the case, and exhausting the patient so much that in fatal instances it seemed to me to be the principal cause of death. The discharge at the commencement, in all cases of a simple character, is serous, and is often attributed by the patient to the operation of a cathartic dose, taken by the patient upon his own responsibility, or from the suggestion of his medical adviser; and whatever the medicine may be, the result is the same. In the lapse of time, blood and mucus, one or both, may be, but are not always, mixed with the other discharges. When *ténismus* and many other symptoms denoting inflammation of the colon and rectum supervene, which in most cases are apt to mark them as fatal—*tympanitis*, *borborygmy*, eructations, and the discharge *per anum* of a large amount of wind, generally comprised a part of the long catalogue of painful symptoms in the advanced stages of the complaint. Much less frequently the abdomen is flat and lank, with tumidity only about the iliac region. Whatever its condition may be as to tumidity, tenderness, when the patient retained his senses, is, I believe, always complained of; perceptible, possibly, only when the attention was drawn to the diseased part of the bowel by pressure. The urinary secretion varies also in quantity and quality; almost total suppression is usual, and what is secreted is highly coloured and scalding to the urethra, producing strangury that annoys both the physician and patient, and which, towards the conclusion of many cases in which much stupor existed, needs the catheter to relieve. Bloody urine, and numerous deposits with swelling of the genitals, are often observed.

Such is a sketch of the more simple cases as they occurred during the first two years after the commencement of the disease in this vicinity; and during this period I do not remember to have seen the symptoms of any other acute disease engrafted upon or blended with those of typhoid fever. As this fever grew more frequent, however, complications with chest disease became common, and now the greater majority of cases exhibit symptoms denoting this formidable complication. There is dulness on percussion over some portion of the chest; pain and difficult breathing, and physical signs indicative of some form of disease within the chest, with cough and expectoration. The

most common complication is inflammation of the lungs. Usually the first indications of disease of the chest are observed from one to five days after the onset of the fever, but in many instances they are coeval with, and indeed may even precede it. This complication is at the present time the most prevalent. I have reason to believe indeed that pneumonia had existed in several cases where the chest was not auscultated early in the case without its being discovered for several days after. A prominent instance occurred in my practice quite recently, in which the stage of hepatization was discovered by auscultation and percussion, and to which additional evidence was added the symptoms peculiar to pneumonia in its march towards resolution. All obscure examples of this complication have occurred in persons advanced in age.

It is unnecessary to enter into a more minute description of the pneumonia above, mentioned but I would add to what has already been said that all the cases intended to be included in this imperfect description exhibited completely and unequivocally the distinctive features of the two diseases. And it is this form of disease alone to which in my opinion the name of typhoid pneumonia should be exclusively applied. Indeed, it has always appeared to me a misapplication of the term to use it in connection with a disease that does not manifest this condition from the commencement.

The small rose-coloured eruption was frequently observed, but in many cases, which in every other respect were similar, these spots were looked for in vain. It may be well to observe, as confirmatory of the same statement by others, that the remittent and intermittent bilious fevers, formerly so very prevalent here, have almost disappeared since the occupancy of the same districts by this fever.

I am unable to add anything relative to the morbid anatomy of the disease, for the prejudices of friends precluded post-mortem investigation.

I wish to premise to what I have to say on the subject of treatment, the remark, that should my experience differ in respect to the use of some remedies from the teachings of the most approved authors, and the plan adopted by a large majority of my fellow practitioners, I have been driven to the use of them from a want of others that would fulfil the indications presented by the disease as it prevails here. That experience too is not the result of a few cases merely, but of laborious practice in it for three years in a locality where it is the ruling disease.

The treatment of simple typhoid fever, so far as I know, generally partakes very largely of the expectant. And this, probably, originates from the fact that most internal remedies as well as almost all ingesta irritate the bowels, and are thus injurious. The diet is a matter of the first consideration, and should be of the blandest and least irritating character. What agrees best generally is rice-water cooled with ice to suit the burning thirst of the patient, to which he may be confined for the first part of the disease; as debility indicates the necessity of more nutritious diet, animal broths made

of lean portions of flesh, any supernatant oily matter, being carefully taken off, will answer a good purpose. This kind of bland but nutritious food should be commenced early in the disease, and given in quantities sufficient to sustain the strength of the patient against the exhausting influence of the disease, with the same regularity as to time and quantity that we observe in the use of medicines. By this course we will avoid the necessity of using alcohol or other stimulants, which, when given in quantities large enough to obtain any effect from them, produce some perturbation in a system already too highly irritated. Quantity, in the use of nourishment, is a matter of the greatest importance; we should use a small quantity at a time, and repeat often enough to gain the required amount. It always has seemed to me, in the small experience I have had in the use of stimulants, especially the alcoholic, that as they are generally used they are more injurious than beneficial; that the rules for administering them should be plain and well understood; and that they should be used only when there is an unequivocal demand for them. And I think, in the case before us, we are not to prescribe wine because we are treating typhoid fever, but for no other reason than that alarming sinking is present. This will be found to be the case usually when treatment has been delayed or inefficient. The nourishing plan should be commenced early, and continued perseveringly and systematically; not by tonics or stimulants, but by the introduction of nutritive, unstimulating aliments, administered with the same scrupulous regularity as to time, quantity, and quality, as we observe in exhibiting medicinal substances.

Another point for consideration, which presents itself to one accustomed to seeing the progress of this disease, is the frequent imprudent assumption of the erect or sitting posture for evacuating the bowels and bladder. This is a fruitful source of the exhaustion supervening on the latter stages of this fever. No excuse, therefore, should be allowed the patient for the interruption of the most entire quietude in the recumbent posture. The means of obviating this difficulty are well known to all, and supplied by the many forms of convenient bed-pans now in use, combining cleanliness with convenience. Frequent change of position in the bed should also be discouraged. The idea will readily occur to every mind that frequent motion and change not only exhaust the strength directly, but also increase the irritation of the bowels, and thus indirectly contribute to the production of the same effect. The urgent thirst that sometimes occurs is too often allayed by the use of different drinks that are not the most appropriate; such, for instance, as acidulated water, soda water, and other effervescing draughts. We should recollect that in fatal cases the damage generally occurs to the small intestines, and that acids and neutral salts both will, more or less, irritate the mucous surface of that important portion of the alimentary canal. And experience teaches the important fact also, that in this disease the diarrhoea is almost immediately increased by the use of any of these articles, if used in quantities sufficient to allay the thirst. Ice water in small quantities, or ice in substance, will sel-

dom disagree, and will most effectually accomplish the object we should have in view, to cool without irritating the mucous surface. Sponging the cutaneous surface allays very perceptibly the febrile excitement, and adds much to the comfort of the patient, especially if there is burning heat of the surface—in which case alone it is applicable. So far as medical treatment is concerned, the train of symptoms which need most attention in typhoid fever is that connected with the intestinal lesions. As this, like most fevers, tends to resolve itself in health after running a definite course, our object should be to arrest the local affections presenting themselves during its continuance, which experience has proven to be most fatal in their effects. Now it is conceded by the weight of authority, that the intestinal lesions are constant and generally the most extensive in grave cases, and are manifested by severity in the symptoms pointing to this source, among which diarrhœa holds a conspicuous place, and the obstinate persistence of this sign is of fatal import. It is also obvious that its continuance must in more than one way aggravate the pathological condition upon which it depends. For example, by the irritation of transporting the contents of the upper bowels and stomach over the diseased surface—by the motion of peristaltic action, and indirectly by the motion of the patient in attending to the necessary calls. It is admitted, too, as a fact, that means calculated to prevent, or in any way mitigate, the *characteristic* lesions of fevers where they are known, such as the eruption in small-pox, measles, &c., cause them to pursue a milder course, as also to prevent the *accidental* lesions which are observed in all of them. Hence we infer that such will be the case in the use of remedies calculated to relieve the intestinal disorder in typhoid fever. The remedies, therefore, that will effect the arrest, or even a considerable moderation of the diarrhœa—which is so constantly draining the system—without proving deleterious otherwise, are the great object of our search. In any organ inflamed, in which motion is a part of its function, rest, if not indispensable, is at least desirable in the treatment of that inflammation. Now as the motion in this case is in a great measure dependent upon the irritation produced by this inflammation in the moving part, and as we cannot remove this cause of irritation by any means within our power, the only resource left is to allay that irritation by the use of soothing medicines. The one, according to my experience, best calculated to do this is opium, in as large doses as are necessary to restrain the diarrhœa, and repeated as often as the patient can bear it. I am aware that opium to any extent, in the disease under consideration, is objected to by many on account of its effects upon the brain, causing stupor, delirium, &c. But we are led to suspect disease of the brain when upon examination no lesions are discoverable—and we should not abandon the use of a remedy for fear of possible danger from it. If we were to do so, we might lay aside many of our most useful and efficient drugs. I think, then, we can make the use of opium the rule instead of the exception. A fact might be mentioned here, which I believe is not generally practiced upon, as to the effects

of this medicine upon local inflammation ; viz., to keep the system under the influence of large doses of opium for several days will render local inflammations of the mucous membranes mild and manageable that have for a long period resisted the most judicious management. Thus patients affected with chronic ophthalmia often take sixty grains in as many consecutive hours, with the most happy effect upon the conjunctiva.

My usual management is to commence with an emetic of ipecacuanha, and follow it in five or six hours with a cathartic of calomel and jalap, in order to effectually empty the stomach and bowels, and thus be prepared for any other treatment that may be indicated. For a febrifuge when there is no pain or soreness in the abdomen, or diarrhœa, the James's powder, or nitrous powders were generally used. When the abdomen is tympanitic, however, with pain and diarrhœa, all other medicines are laid aside for opium in some shape, and the one commonly used is Dover's powders, in as large doses as the stomach will bear, or sufficient to allay the pain and diarrhœa. And should this not be sufficient, opium is added to them, in sufficient doses to have the desired effect, if possible. And although occasionally some degree of stupor may be the result, it is seldom considerable, and never increases to an alarming extent, although as much as thirty grains in twenty-four hours were given. In many instances where delirium, restlessness, subsultus, and jactitation are great, they are *all relieved*, and the patient much improved by full doses of opium, repeated so as to keep the patient constantly under its influence. I have witnessed cases in which the medicine was suspended from some imagined bad effect, with a return of all the distressing symptoms above named, again disappearing so soon as it was resumed. And in all cases, with very few exceptions, where this course was continued, the patients comfortably weathered through their disease and recovered, it only being necessary to gradually increase the dose to keep up the effect. The complications of this fever, of which by far the most common are pneumonia and bronchitis, although they somewhat modify, do not change the treatment necessary. And however inappropriate opiates may be in the ordinary forms of pneumonia, especially when so frequently repeated, they have in my experience, I may say, invariably produced beneficial results in cases supervening upon or accompanied by typhoid fever. Indeed, the symptoms all yielded sooner than they do under any other course of treatment I have seen adopted. The treatment I have seen most effectual in this complication, after an emetic and cathartic, consisted in calomel and opium, according to the condition of the bowels, repeated every three or four hours until the mercurial influence was indicated by the ordinary affection of the gums and salivary glands. When this was brought about, the calomel was discontinued and the patient put under the opiate treatment, as above described. Mustard plasters and fomentations early, and blisters at a later period, constituted the local treatment used in such cases.

CASE I.—*February 4th*, 1838. Was called to see J. H., aged twenty-six years, sanguine bilious temperament. Had been sick four days with fever, pain in head, vertigo and slight delirium at night; aching of bones and back, nausea and sense of heaviness of epigastrium. Tongue coated yellow, edges and tip red, bowels costive, soreness over the whole of the abdomen, with tension. Skin hot and dry. Pulse 120, weak and small. Urine scanty and high colored; in short, he was labouring under typhus fever, which was then prevailing. Ordered an emetic of ipecac, to be followed in four hours with cathartic of calomel and jalap. After the operation of the cathartic, to take six grains of James's powders every three hours; and should the bowels be operated on too freely, to take Dover's powders, gr. viii, every three hours until the discharges are checked. Sponging of the surface, cold to the head.

5th. Cathartic operated in two hours, very copiously. Has taken several of the Dover's powders; but yet the bowels act as often as once every four hours. The stools are thin, greenish, serous, without a trace of fecal matter. Delirium is more decided; the patient is restless and talkative, but not raving; the surface over the abdomen very hot, less so elsewhere, but rather above the natural temperature; tympanitis; the tenderness great over the middle and right side of the abdomen. Tongue dry and red on the tip and edges. Vomits the James's powder. Take Dover's powders gr. viii with gr. ss of opium every three hours. Foment the abdomen with warm camphorated spirits. Take teaspoonful of chicken-water every four hours. If bowels are not restrained, take thirty drops of laudanum as often as necessary to effect this object.

7th. Patient is better; has rested well; complains of no pain; more rational. Pulse about 120, weak and small. Complains of great debility. Has had but two operations from the bowels since last visit, which was directly after it. To keep perfectly quiet in the recumbent posture. Continue the medicines and nourishment as last prescribed.

9th. Continues about the same as at last visit; has had four dejections from bowels. Nurse found it necessary to give the laudanum several times; does not remember how often. The opium in Dover's powders was now increased to three-fourths of a grain, and direction given to administer laudanum if necessary. Continue chicken-water, &c.

11th. A slight improvement in all the symptoms. Had one passage, which was more consistent and fecal. The patient continued gradually to improve; but acquired a still further increase of the opiates, until he took two grains of opium every four hours, with laudanum between these doses occasionally.

J. H. was under this treatment for twenty-eight days, during which time, he seemed benefited by each increase in the dose of opium. It appeared always to quiet his restlessness and delirium, which was aggravated upon every return of diarrhoea. When opium produced merely quiet sleep, and the patient could be easily aroused, which was the case with almost all the instances I have witnessed in typhoid fever, I consider it advisable to continue it.

I might detail many cases like the above; but as the symptoms and treatment vary so very slightly, I think it quite unnecessary.

The following is a case complicated with pneumonia, in which the opiate treatment in a modified form was used with great apparent benefit.

CASE II.—W. C., aged 28 years, was attacked, March 1st, 1850, with typhoid fever, which continued without other than the ordinary symptoms of

the disease, until the evening of the 4th, when he suddenly became chilly, and began to experience difficulty of breathing; had pain in the right side extending to the shoulder, cough, and next day was expectorating the rusty-looking sputa so common in inflammation on the lungs. His condition on the fifth was the following: Countenance anxious and suffused, with a dusky blush; pulse 120, weak and small; tongue covered with dark brown fur on the middle and root, while the edges and tip were red and glossy; nausea but no vomiting, diarrhoea of thin dark serum, attended with pain, which dated from the operation of a dose of Cook's pills. On the third day of the disease abdomen tender, and tympanitic with borborygmy, subsultus tendinum and stupor, from which the patient could be easily aroused, and when awake his conversation was vague and incoherent; pain of a dull heavy character in the right side and shoulder; cough, with bloody tenacious expectoration; dulness on percussion over two-thirds of the right lung, below and behind; absence of all respiratory sounds in the lower portion; fine crepitus in a line across the chest, about two inches wide, rather above the middle of this side. Ordered an emetic of ipecacuanha, followed by the following powder every three hours: Cal. gr. ii; ipec. gr. iv; opium gr. i. Mix. Mustard all over the affected side; fomentations with hot camphor to the abdomen; a teacupful of chicken-water every four hours, and drink to consist of gum-Arabic water. 7th. Was better, for first twenty-four hours, but since that his bowels have been moved too frequently; is becoming quite weak, otherwise the symptoms are about the same. Continue the powders and pursue the other directions with addition of Dover's powder gr. viii; as often as necessary to keep the bowels in check. To observe absolute quiet in the recumbent posture. 9th. In nearly the same condition as at last visit, except that his bowels have been controlled by taking a Dover's powder between each of the other powders. This treatment was continued for four days longer, when the gums became slightly affected by the mercury. The symptoms of pneumonia gradually subsided, and in a few more days the simple fever, so far as could be judged by appearances, was the only disease present. On the supervention of ptyalism the calomel was omitted, and the opium and ipecac. with the addition of two grains of camphor to each powder. Dover's powder was continued. It was necessary in the progress of the case to increase the opium in the powders to two grains, and to continue the Dover's powders in the above doses. The patient lingered for seventeen days before the fever began to yield; convalescence then gradually set in and continued, when the opiates were gradually diminished in quantity until he was out of all danger.

My object in the above communication has been to detail, in as intelligible a manner as I could, a course of treatment which I think will be found beneficial in many instances of this troublesome fever, and I am in hopes that no one will condemn the course above described without first giving it a trial. I believe they can the more readily consent to do this from the consideration that the treatment is not so defined either by authority or the interpretations usually put upon symptoms as indications for treatment, as not to justify any course, however different from the one commonly followed, that experience may upon trial sanction.

I would here mention another circumstance which I have often observed in this fever, viz., that purgatives or laxatives produce very exaggerated effects when administered by the mouth, and will mention one instance

as illustrative of their kind of influence. I have a patient now under treatment who informed me that one teaspoonful of castor oil operated on her in five minutes, very copiously, producing violent griping pains. She also informed me that in an ordinary way she required more than the usual dose to affect her. On the second day after she mentioned it to me, it became necessary to administer another laxative. I determined to satisfy myself whether she was mistaken in this respect. I accordingly gave her a teaspoonful of oil, and in ten minutes she had a copious serous evacuation, and it was necessary in half an hour to resume the opiates in order to control its effects.

Although the above is an extreme case, yet it will be necessary to bear the fact in mind, and use injections alone as laxatives to avoid undue irritation of the bowels.

ART. VII.—*Cases in Surgery.* By D. GILBERT, M. D. (of Gettysburg, Pa.),
Prof. of Surgery in Med. Dept. of Penn. College, Philad.

THE publication of cases in illustration of subjects which characterize progress in any of the practical departments of medicine, is necessary to the full development and illustration of principles involved. With this view, the following practical details in surgery have been selected from my case-book, and are respectfully presented to the notice of the profession. The practical procedures are either entirely new, or illustrate such as require further confirmation. It is, therefore, believed that their publication will add something to the common stock of our surgical knowledge.

CASE I.—N. S., æt. forty-three. Health enfeebled for several years by impaired digestion, sustained severe injuries of the knee, thigh, and pelvis, caused by falling timbers, at "a raising" of a barn, August 10, 1850. On examination, aided by my partner, H. S. Huber, M. D., found that the injured parts had been caught between falling timbers, three of which fell severally upon the parts injured. The thigh bone was fractured in the upper part of the lower third obliquely. The knee had been dislocated laterally, but reduced before we arrived. The lateral ligaments being torn, the articular surfaces could be moved upon each other, from side to side, very easily. The soft parts from the knee to the thorax, including the penis and anterior part of pelvis, were seriously contused, and ecchymosed. We adopted the angular method, temporarily, until the apparatus for the straight plan of treatment could be provided, it being at some distance in the country. This was procured next day, and applied in the usual manner: except (1), instead of the permanently attached block of Hutchinson, a movable one, which I have found more convenient, was used. This may be made of inch plank,

the shape of the figure 4, the longest side measuring about eight inches. It is attached flatwise, by passing the extended part, as a tenon, through a mortice hole, one inch square, in the long splint, and securing it there by a pin passing close to the outside of the splint; the long side of the triangular portion on the inside of splint presenting obliquely towards the foot of the patient. (2.) Instead of a mere extension band, I attached this to the straps of a common tourniquet, close to the sole of the foot, and placed the instrument upon the distal side of the block, which is at right angles with the splint, and thus, by the screw of the tourniquet, increased or diminished the extending power at pleasure. (3.) Instead of the perineal band, I had an opportunity of testing the value of *adhesive plaster* as a counter-extending bandage. Dr. Wallace, of Philadelphia, introduced, several years ago, the use of this in making extension at the ankle; and my experience with it has been so favourable that I concluded to use the same material in counter-extension on the first opportunity. This case, all will admit, presented a rare occasion for testing its utility, as the condition of the parts would not allow the use of the ordinary bandages.

The several constituents of the apparatus having been laid down in the usual order, two adhesive strips, two and a half inches wide and two feet long each, were laid diagonally, one from either side, above and upon the tailed bandage, so that their inner extremities crossed each other at an angle of about 100° , and extended about four inches farther. The strip which laid towards the sound side was rolled up from its outer extremity to the point of crossing, and the short inner end of the other strip to the same point. The patient being placed upon the apparatus thus arranged, the unrolled strip attached itself to the posterior surface, from the perineum to a point above the ileum; the roll of the other was brought over the perineum, upper part of thigh, and up inside of the cresta of the ileum to meet the other strip; its inner extremity being under the posterior surface of thigh, and the short roll of the posterior strip occupying the inner and partly anterior surface of thigh, their point of crossing being brought to inner and upper part of thigh close to perineum. Externally, the extremities of these strips also crossed each other—the posterior to the upper mortise hole, and the anterior to the lower mortise hole of the splint—in order to increase their surfaces of attachment to the body of the patient. The application of the remainder of the apparatus being completed, extension and counter-extension was made, and subsequently maintained. Without giving the subsequent treatment in detail, it is sufficient to say that no complaints were uttered in reference to these adhesive bands, although, by means of the tourniquet, they were held in a state of constant tension. The contusions and laceration of the ligaments of the knee yielded to anodyne resolvent washes, and, at the end of seven weeks, the bone was firmly united. To insure entire safety, the limb was placed on the double inclined plane for another week, when all retentive measures were abandoned. At the end of four weeks, after its first application, the anterior adhesive plas-

ter became loose, and Dr. Huber supplied its place by another somewhat longer; with this exception, and one renewal of the extending bands, they were not removed during the whole period of treatment. There is no shortening of the limb, although the fracture was oblique.

The advantages of a movable block are, that it does not interfere when the splint is rolled in the cloth, and can be attached to whichever side of the splint presents towards the patient; and, above all, it furnishes a secure place of attachment for the frame of the tourniquet, by means of which continued and varied extension is always at the command of the surgeon. Our greatest difficulties, however, ordinarily arise from the pressure and excoriation caused by the extending and counter-extending bandages at the ankle and perineum. The lameness of the Marquis de Lafayette resulted, it is said, from *ulceration* produced by the perineal band when he was treated for this fracture. To obviate these sources of embarrassment in the treatment of fractured thigh, materials combining softness and firmness have been selected, made into various forms, so as to extend, distribute, and vary their points of contact, and press equally, smoothly, and softly; and yet, to render these tolerable, with the best appliances, it is found necessary to remove the bandages daily, and bathe the parts with spirits, or mild liniments, thus protracting union by frequent motion, besides requiring the daily service of the attending surgeon. In hospital practice, such attention is provided for; but in country locations, where the medical attendant cannot visit the patient oftener than once in three or four days, the consequences are sometimes disastrous. During his absence, the patient, unable to endure the pain, loosens the bandages, and displacement is the consequence; or, resolving bravely to endure the pain, the practitioner finds an amount of excoriation, with a morbidly irritable condition of the constitution from suffering, which seriously interfere with the successful issue of the case. These difficulties, every one who has had experience, has realized; and hence the numerous modifications of apparatus which are met with in the journals, as well as in the regular treatises on surgery. Many of these are excellent in their way, and, if every practitioner was provided with them, they would prove valuable; but, as all the indications can be answered, in the great majority of the fractures of the thigh, by the apparatus of Desault, and as this is available everywhere, it becomes a matter of importance that this should be improved. Whether the modifications described above will prove as valuable in other hands remains to be tried; but, so far as the experience of the writer extends, he has found that there is an entire absence of pain from pressure, abrasion, or excoriation, so common in the ordinary method; that there is no necessity for slackening bandages, for the purpose of bathing the parts or intercepting soft substances; that, hence, union will be more certain and speedy, all motion of the bones being prevented; and that extension, sufficient to overcome the muscular contraction, can be maintained constantly by the tourniquet, and shortening of the limb prevented.

CASE II.—*Fibrous Tumour in the substance of the Uterus.*—I was requested in the autumn of 1844 to visit Mrs. B., æt. forty, of bilious temperament, general health good. Had given birth to a child, now living, when she was twenty-one years of age. Was married about four years previous to this visit. Found her suffering intensely from strangury, being the period of her menstrual flow; was informed that for several years she invariably suffered during this period, for which she took anodynes. Made an examination per vaginam, and found a large tumour, nearly filling the superior strait of the pelvis, extending from above the umbilicus down to within an inch of the perineum. I found the os tincæ on the anterior part of the tumour about an inch from its lower extremity; its form was changed, being extended from side to side about one and a half inches. I could pass the female catheter its entire length into the cavity of the uterus. I introduced the speculum uteri, and found that the tumour was covered by mucous membrane, and that instead of the pure white which is characteristic of fibrous tumour, it presented the normal colour of mucous membrane covering the uterus. Having ascertained these facts, I had no difficulty in deciding that this was a case of fibrous tumour in the substance of the uterus, occupying its posterior wall; the whole organ having been distended by this adventitious growth. Having introduced the catheter, to relieve the bladder, I gave her anodynes with diuretics. After the menstrual period had passed, I prescribed laxatives and Lugol's solution, in the hope that the increase of the tumour might be prevented. At this time I did not think of any operation, as Dupuytren, after his extensive experience, as well as other writers, pronounce this variety of tumour beyond the reach of operative means. Soon after my return to the country from Philadelphia, in the spring of 1845, I was again summoned to my patient; found the tumour increased in size, and the mechanical obstruction so great that she had to use her fingers in aid of defecation, and had increased difficulty in voiding her urine, which passed in small quantities during severe and protracted efforts.

I again explored the parts thoroughly, found them as in first examination, except that the tumour had increased in all its dimensions, and measured, as nearly as I could ascertain, about fourteen inches in its long diameter, being spindle-shaped, while its short diameters were those of the upper strait of the pelvis, which it filled. Finding this increase in bulk, and there being every reason to believe that it would continue to grow, and thus entirely occlude the passages for the urine and fæces, I determined to resort to operative means, although without precedent to guide me. Supposing that the areolar tissue between the tumour and uterine substances might be found abundant and loose, I concluded to make an effort to draw the uterus down as near as possible to the os externum, make an incision upon the tumour, and with the aid of fingers, scalpel handle, and occasionally the edge of the scalpel, I might be able to divest it of its uterine covering and remove it. Having made every preparation, I succeeded in bringing down the uterus by the aid of a large tenaculum; made an incision, but found the cellular tissue so condensed that

it was manifest the tumour could not be removed in this way. I then made very free and large incisions into the tumour, with the expectation that the imperfectly organized mass would become atrophied by the discharges which must ensue from these incisions, since union by adhesion or granulation could not here take place. Success beyond my most sanguine expectations followed this procedure, the tumour diminished in size, and I have not been called to prescribe in the case or to pass the catheter during the last five years.

CASES III. and IV.—*Tracheotomy for the removal of Foreign Bodies.*—In these cases, the one aged one year, the other three and a half years, the operation was performed in the usual manner with entire relief of symptoms of impending suffocation, and yet the foreign bodies were not discharged or extracted through the opening made. In the case of the youngest child, a part of a grain of roasted coffee had been drawn into the windpipe with the inspired air, and immediately gave rise to the characteristic symptoms of foreign body in the trachea; the paroxysms recurring more frequently, and becoming more alarming in their character, the operation was performed at the end of forty-two hours after the accident. The coffee not appearing at the opening made, a probe was cautiously passed down into the bronchii and up through the rima, but the foreign body was not discovered. Having observed the patient to swallow immediately after the opening was made, the mother was directed to examine the diapers, and thus next day was found the undigested piece of roasted coffee, which doubtless had been located above the opening and was carried up into the pharynx and swallowed as soon as the spasm of the muscles of the larynx was overcome by the free admission of air below. In the other case, a piece of raw sweet potato had been taken into the windpipe during violent inspiratory efforts when at play with other children. There was immediate dyspnoea, threatened suffocation and livid countenance; these symptoms subsiding, the parents supposed that there had merely been an arrest of the body in the œsophagus. The paroxysm recurred, however, when they sent for their physician, J. Weaver, M. D., of York County, who requested that I should be sent for, as an operation, in his opinion, was the only means of relief. We found indubitable evidence of the presence of the foreign body in the trachea, and the low operation was performed in the usual manner. In this case I observed that a moment after the opening was made in the trachea, the child swallowed, and exclaimed "Now it is out." All the symptoms of foreign body in the windpipe disappeared. The probe was, however, carefully introduced, as in the other case, and with the same results. Both cases had a rapid recovery, and did well.

CASE V.—During the same season (the fall of 1846) in which these operations were performed, a boy aged six years was brought to me from York County, who had a few days previously, whilst at play, drawn a grain of corn into his trachea. The operation was performed by opening the trachea, and

the grain of corn was immediately expelled by the violent action of the chest in expelling the pent up air.

In performing this operation for the removal of foreign bodies, every surgeon must have observed this violent expulsion of the accumulated air within the lungs, not only through the opening made but also the natural passage through the larynx, in consequence of the removal of all spasmodic closure there, as soon as the opening is made. Foreign bodies, then, which are located above the opening would naturally be carried by the upward current into the pharynx and swallowed, whilst those below would most likely be expelled at the new orifice in the windpipe.

In performing this operation for the removal of foreign bodies, I make the opening into the trachea on the left side at about two lines from the mesial line, so that the orifice is completely closed by the overlaying muscles and fascia. I was led to adopt this method after having heard of two fatal cases from effusion of blood into the trachea after the wound was closed externally. Supposing this valvular closure sufficient to prevent such a result, after waiting for from half an hour to an hour after the operation, I permanently closed the wound, and union by primary adhesion usually is the result. In one of my cases there was secondary bleeding a few hours after closure, but the blood passed outwardly, the respiration not being impeded in the slightest degree.

CASE VI. *Luxation of the Shoulder-Joint.*—W. C., a large muscular man, in falling to the ground from his feet and attempting to save himself by throwing out his right arm, dislocated the head of the humerus into the axilla. Reduction, by the aid of two assistants, was accomplished in the following manner: A piece of muslin three yards long and one wide was gathered up in the hands lengthwise and the central part applied to the axilla, thence upwards anteriorly and posteriorly to the top of the shoulder close to the neck, where it was crossed, binding the shoulder firmly and fixing the head of the scapula immovably. From this point, one remaining portion of the band was carried to the sound side anteriorly and the other posteriorly, and given to an assistant for counter-extension. To the other assistant I gave the end of a towel, which was attached to the arm for extension. I took my station behind the patient, placing my fist of the left hand in the axilla, and seized the lower end of the humerus with my right hand. I then directed the assistants to make slow, steady and firm traction, and so soon as I found the head of the bone sufficiently down, I suddenly depressed the lower end of the humerus, my fist acting as a fulcrum, and the head of the bone resumed its place in the glenoid cavity.

Having experienced great difficulties in effecting reduction in my first case of luxation of this joint, owing to the mobility of the shoulder, which permitted the glenoid cavity to maintain its abnormally relative position to the head of the bone, during the application of the extending and counter-extending forces, as usually applied, I was led to adopt this plan, and with invariable success

without resort to bleeding or nauseants. By this method of applying the counter-extending bandage, besides fixing the shoulder, and obtaining complete command over this and the arm, the bandage in front as it crosses the neck, presses upon the windpipe of the patient, producing the sensation of choking, which throws him momentarily off his guard and the head of the bone readily slips into its place. Having taught this method for several years in the college, former pupils now in the profession have reported like success in their cases, by this plan of fixing the shoulder and withdrawing the attention of the patient from the seat of injury, at the moment when reduction is made.

ART. VIII.—*Remarks on the Treatment of Cholera.* By RICHARD
McSHERRY, M. D., U. S. Navy.

IT becomes sometimes as much a matter of duty for a medical man engaged in the active duties of his profession to contribute his mite to the general stock of knowledge by confirming or disproving the statements of others as by advancing theoretic or practical novelties. Whenever a formidable epidemic invades a civilized community, it is due to science and humanity that those who have to contend with it should give to the world the result of their experience; and to do the profession justice, it must be admitted that no class of men can be found to bestow more freely the precious results of their hard-earned knowledge. But it may happen that the very "multitude of counsellors" will confuse the mind of the student who is trying to fortify himself with the experience of others before it devolves on him to meet the enemy front to front; he has so many expedients to resort to, and is armed with so many weapons, that he runs the risk of being overthrown before he can determine which to choose. One plausible writer has told him that in cholera asphyxia opium is the sovereign remedy; another says no, that mercury is; another says camphor, quinine, ammonia, acetate of lead, or some other of the "thousand-and-one" remedies mentioned is most to be relied on, each directing something different from the rest, confusing inquirers to such an extent that it is little wonder if some practitioners jumble together not only in their own brains but in the stomachs of their patients all of these heterogeneous materials at once. Now it is an opprobrium, *maxime deflendum*, that to this day there is no systematic course concurred in generally by the profession in the treatment of this disease. The question may be asked here, Whether any treatment deserves to be considered scientific as heretofore practiced, or whether it may not all be called empirical? My own conviction, founded on experience, is that notwithstanding too many of our brethren are ready to be deluded by charcoal and sulphur specifics, others, taking certain rational data, use certain remedies for

definite ends, which, when accomplished, tend to the cure of the patient. Cholera has its philosophy, and although in its nature there are depths not yet fathomed by human wisdom and research, yet we find that it produces certain obvious conditions in the system, which conditions we may change and modify by familiar agents. This is scientific practice.

Among the many able documents which have proceeded from the medical press in relation to the disease in question, I beg leave to refer to two which have appeared in this journal as embodying, in manner clear and unencumbered, nearly all the information that the physician *can reduce to practice at the bedside*. I cite the article of Dr. Shanks in the No. for July, 1849, and that of Dr. Gayley in the number for the same month, 1850. These two gentlemen both treated their cases with remarkable success, and although there was considerable difference in the mode of treatment, both kept steadily in view the same object, viz., the unlocking of a thorough congestion of the greatest gland in the body. The liver, it is true, is not alone in the congestion, but it stands like a great dam in the circulation between the portal system and the heart, thus causing inordinate fulness or congestion in the vessels of the stomach and bowels. By a process of exosmosis, says Dr. Gayley, the watery parts of the blood find their way into the intestinal tube and pass off from the stomach and bowels, carrying in their downward course the epithelial scales washed from the surface of the mucous membrane, and giving the discharges the appearance of rice water. Now the mere arrest of these discharges while the function of the liver is totally suspended is not sufficient to cure the disease; the floodgates of the dam must be opened; a scavenger must be sent to clear out the closed channels of the obstructed and obstructing organ. When this is effected, we have sufficient concurring testimony to prove that the disease is overcome. Dr. Shanks says that in every stage of the disease, with two doubtful exceptions, "when bilious discharges from the bowels were obtained, recovery speedily and certainly took place." Dr. Gayley, premising that the great desideratum is to unlock the secretions of the liver by setting the cells to work, says "that the experience of the profession is that nothing will do this so well as calomel," which he properly designates as the "sheet anchor in this terrible malady." He gave calomel, and calomel alone, and saved thirty-two out of thirty-five cases. Now with such success one might readily be willing to forswear opiates, camphor, brandy, chloroform, etc. But may not adjuvants be essential in certain cases? The most fearful congestions are certainly relieved frequently by large doses of quinine, of opium, etc., and there is every reason to believe that in such cases they have saved life in many instances. Dr. Shanks combined opiates with calomel, because he had been convinced "by years of careful observation of the importance and necessity of the combination in congestive fever of the continued form, and from the pathological likeness of cholera the same practice to some extent was adopted."

In the summer of 1849, being attached to the U. S. Naval Hospital, near Norfolk, in association with Drs. Patton and Whittle of the navy, we received

a number of cases of cholera at various stages of development. We concurred in the treatment which made calomel the "sheet anchor," but did not reject the adjuvants; we used, in short, freely, calomel, opium, and camphor, pounded ice, cups over stomach, &c., and sinapisms and frictions to extremities; in some cases, quinine; and, as of secondary importance, a house prescription, though not peculiar to the house I believe, an anodyne and diffusible stimulant mixture of Hoffman's anodyne, spt. camphor, paregoric, and comp. spt. lavender, and more rarely alum, or sugar of lead. We treated between fifty and sixty cases, one-half of which, it must be understood, did not get beyond the premonitory, or first stage; but the others went on to the distinctive developments. We lost but *two* cases during the summer; one of these came into our hands actually moribund; the other, a noble specimen of the physical man, was brought to us on the evening of the 5th of July, having arrived from Philadelphia with a body of recruits. His disease took him *en route*, on board of the Baltimore boat, where he received no treatment. When brought to the hospital from the receiving ship, we learned he had rejected all medicines from the stomach before fairly swallowed. (By the way, it is to be regretted Dr. Gayley's plan of administering calomel had not been here used, *i. e.*, to apply it dry on the tongue with a little sugar, to be washed down with a small draught of ice water). By the active use of ice and counter-irritants, we succeeded in suspending the vomitings long enough to introduce a few doses of calomel and other medicines. The progress of the case continued unfavourable, and, at 3 o'clock A. M., on the 7th, he died. The *post-mortem* examination presented the usual appearance, except that, I find in my notes, "the coats of the small intestines were considerably injected; within the canal *yellow bile* was mixed with other fluids." In the large intestines, there was no bile, but the dingy fluid usually passed from the bowels made thick and pulpy with the loosened epithelial layer and mucus. We thought our remedies had commenced to act when it was too late to save life, and that, had that bile been started by a single dose of mercury, when he was taken on the boat, the issue might have been entirely different.

But a few days ago I was called, in connection with my father, Dr. Richard McSherry, of this place, to attend an advanced case of cholera, in the person of a lady just arrived from Cincinnati. When we first saw her, she appeared to be verging upon a state of collapse. Her features were pinched and shrunken; large dark circles surrounded her eyes; the pulse could scarcely be distinguished by the most careful examination; she was passing rice-water stools, and vomiting the fluids she drank. The tongue had lost its natural warmth, and she was suffering violent cramps, which last alone induced her to call in a physician. Her general appearance indicated the near approach of death. She was given immediately calomel gr. xx. with laudanum; sinapisms and frictions were applied to the extremities, cups over the stomach, as recommended by Dr. Condie in his notes to Watson's *Practice*, and hot epithems of turpentine. Meantime, we made an extemporaneous prescription of paregoric,

camphor, and sulphuric ether, to be given in brandy and ice p. r. n. as diffusible stimulus and anodyne; this we kept up during the day, with small doses of calomel and opium every hour. The discharges began to be checked in quantity, and at length presented a darker color, with some feculent smell; with this the pulse improved, though the patient was not aware of any improvement. The next day, as the stools were still frequent and watery, we gave calomel and quinine, every two hours, in doses of gr. iij each, alternated with sugar of lead and opium, in the doses recommended by Dr. Condie. By next morning, the stools were decidedly bilious, and, as the mouth was touched, the mercury was stopped. Our patient, though free from the cholera, suffers greatly with excessive nausea, which seems to be owing to a secretion of vilitated bile collecting in the stomach and bowels; mild emetics of warm water and salt give very temporary relief by bringing off some of the bile. I gave her one or two doses of castor oil and turpentine, as she complained of a most uncomfortable feeling of fulness in the abdomen. The action of the turpentine was followed by the most painful micturition, to which, she tells me, she is subject at times when in her ordinary health, which at best is not very good. My friend, Dr. E. B. Pendleton, of this place, saw the case with us. Her convalescence is fairly established, this being the sixth day of our attendance.

MARTINSBURG, VA., July 19th, 1850.

ART. IX.—*Poisoning by Corrosive Sublimate.* By H. W. WILLIAMS, M. D.
(Read before the Boston Society for Medical Observation, August 19, 1850.)

THE following report of a recent case of death, after the ingestion of a solution of corrosive sublimate, is interesting from the insignificance of the pathological alterations exhibited upon post-mortem examination.

I was called about noon on Monday, 12th August, to see L. B. R., aged 42, mason; and was informed that he had purposely swallowed a solution of corrosive sublimate. On my way to the house, I learned that he had taken about an ounce of a solution, containing thirty grains to the ounce, and that about half an hour had elapsed since it was swallowed. Was told that he vomited in ten minutes after the poison was taken, and that an emetic was soon after administered by the apothecary who sold the solution, as also one egg. Another egg had been given him by his wife before I saw him. He had vomited several times, in all about six ounces. The matters vomited appeared to consist of mucus and the egg swallowed, with some dark masses resembling sputa except in having a dull lead tinge.

I administered the whites of three more eggs, and whilst others were being

procured, gave some flour and water. Three more eggs were brought and given, vomiting having taken place since the previous remedies had been swallowed. Within half an hour he vomited several times, and I repeatedly gave quantities of flour and water.

I learned from his wife that his habits were intemperate, that he had eaten little for two or three days, and nothing on that morning.

He stated that he took the solution after stirring it in a tumbler with a little sugar.

I found him rolling uneasily about the bed, complaining of severe headache, and great pain in the stomach. When asked to point out the seat of the pain, he passed his hand over the whole of the upper portion of the abdomen. When asked if he had pain in throat, he replied, a little but not much. The fauces were considerably injected. No tenderness on pressure in any part of abdomen. Conjunctiva injected; pupils natural, and sensitive to light. Face rather collapsed and covered with cold perspiration. Tongue nearly natural in aspect, but cool. Hands and feet rather livid, shrunk, and cold. Pulse very rapid and small. Respiration natural. He had had several dejections, consisting of a dark fluid, with some small lumps of dark green fæces, previous to my seeing him.

Vomiting continued till about one P. M., the matters ejected consisting principally of the substances swallowed. Twice, portions of blood were mixed with the matters thrown off.

I directed flaxseed tea to be prepared, and gave it freely. It was eagerly taken, the patient complaining of intense thirst. His aspect is precisely that of a patient attacked by cholera, but who has not yet reached the stage of perfect collapse. Pulse could not be felt at wrist; at the carotids and heart it was 168, feeble, regular. He rolled so incessantly from side to side that it was difficult to distinguish pulsation, even at heart. He complained of a burning sensation in abdomen.

Dejections were frequent, and towards two o'clock several followed each other at intervals of only two or three minutes. They continued to exhibit similar appearances, being almost entirely dark fluid; but several of the last had a quantity of flakes, apparently of mucus mingled with them. He got out of bed without difficulty, but said he felt easier when lying down, as he was dizzy whenever he lifted his head from the pillow. Complained of cramp in left leg.

I ordered bottles of hot water to be placed at his feet, and directed that his limbs should be warmly covered. Directed that two more eggs should be given, and followed, after an interval, by draughts of flaxseed tea.

Again saw him at three P. M. Pulse had returned at wrist; 140, feeble, regular as to frequency, but varying in strength. Face rather less collapsed. Feels less pain. He has vomited the flaxseed tea, and had several small bloody fluid dejections containing small masses of coagulated albumen. They were free from fæcal odor, but had the fleshy smell, sometimes observed in

similar dejections in cases of cholera. He still rolls uneasily about the bed. Conjunctiva less injected. Tongue natural in aspect but cold. Extremities still livid and clammy, but less so than when I last saw him. Face free from perspiration. Great thirst. No tenderness of abdomen. Ordered small quantities of rice water to be given to relieve thirst. Pulv. opii gr. $\frac{1}{2}$ every hour till pain is relieved.

Six P. M. Pulse more feeble than at 3 o'clock. Has no pain. Dejections, of the same dysenteric character, have continued frequent. He has persisted in drinking large quantities of water, and has therefore vomited copiously. General aspect unchanged. Ordered more attention to limit the amount of drink, and pulv. opii gr. $\frac{1}{2}$ every half hour till he becomes quiet.

Nine P. M. Pulse fuller, 118. Fingers still corrugated and cold; tongue cool, natural in colour; face dry; conjunctiva natural. Pupils rather contracted. He has appeared inclined to dose after taking the opium, but has not slept. Great fœtor of breath. His wife says she has previously noticed this, but never in so great a degree. He has no pain, but is very restless, and has the aspect of a patient suffering an attack of delirium tremens. He formerly had an attack, induced by his having fractured a limb. No tenderness of abdomen, but it feels extremely hard on pressure, though it is not at all distended. Passes very little urine. Drinks have still been placed within his reach, and he has vomited freely. Has had several dejections, three at least, since last visit. Ordered bits of ice to be placed in his mouth instead of permitting him to drink. Pulv. opii gr. i; to be repeated every hour if he does not sleep.

August 13th. Face less collapsed; hands a little less shrivelled, but cold and clammy. He drank during the night from the bottles placed at his feet. Slept a little towards morning. Pulse 98, a little fuller than last evening. Tongue clean, warm; no tenderness or pain in abdomen. Has had but one dejection, but has vomited several times. Has a sensation of phlegm in throat, and has frequently expectorated. The sputa appear tough, and are free from any tinge of blood. Ordered rice water to be given as an enema, with morph. sulph. gr. $\frac{1}{4}$. If at the end of an hour he is still awake and restless, the enema to be repeated with morph. sulph. gr. $\frac{1}{2}$.

One P. M. Patient disliked the enema, and but a small portion was given, which was retained. No attempt was made to repeat it. He has not slept, and his aspect is still that of delirium tremens. Pulse 120, very feeble; pupils contracted; conjunctiva natural; face not moist; tongue a little loaded with a brownish coat; hands and feet cold and moist; no dejections. He has been allowed to drink water, contrary to my express directions, and has vomited as often as he drank. Ordered morph. sulph. gr. $\frac{1}{2}$, to be given in solution by the mouth, and repeated if ineffectual.

Nine P. M. No tenderness of abdomen. Some small, dark, fluid dejections. He has not been properly watched, and has constantly been jumping out of bed in a state of excitement. Has vomited. General aspect unaltered.

Slight brownish fur on tongue. Extremities cold. Ordered hot bricks to be placed about his limbs. Morph. to be increased to three-quarters of a grain, and repeated if requisite.

14th. Has not been watched during the night, but sometimes left alone. He has, therefore, been restless. Pulse 140, more feeble. Tongue a little dry, slightly furred. Has some tremulousness of hands. Rises for his dejections with more difficulty. Has passed urine with his dejections, but with difficulty, and in small quantity. Several small dejections, containing a few small lumps of faecal matter. Emesis has occurred a number of times. He seems inclined to spit quite frequently. I ordered that he should not be left alone. The room to be darkened, and morph. sulph. gr. i to be given.

One P. M. Has not slept. Face has a more collapsed aspect. Pupils moderately contracted. Tongue as this morning. Pulse 94. No pain. No dejections. Has vomited greenish fluid. He has not been watched, and is more delirious. Thinks persons are concealed near his chamber, and persists in rising from bed to eject them, as soon as he is left alone; but he is easily controlled, and answers rationally when spoken to. He has some desire for food, and, as his stomach rejected fluids, I allowed him to have a small piece of biscuit, which he said was good.

On calling at six P. M., I was informed that he died about half past four. Soon after I left him, he went down stairs, and, on being induced to return, he fell, as his wife stated, in a fit. This was recovered from, and he died very tranquilly.

Autopsy twenty-five hours after death.—Present, Drs. Storer, Dalton, Buckingham, and Thayer.

Brain healthy in aspect and consistence. The falx cerebri was wanting for the distance of about an inch at its anterior extremity, and the two hemispheres were united at this point. Considerable fluid was effused beneath arachnoid, but no effusion into the ventricles. Heart and lungs healthy; the latter remarkably so. Liver pale, rather friable. Spleen shrivelled, as in cases of death from cholera. The stomach was contracted, for the extent of about two inches, at its middle portion, having the form of a dumb-bell. The contracted portion was about two fingers in width. It contained a small quantity of bright yellow fluid, having the consistence of thin gruel. Its larger and smaller curvatures presented patches of dotted injection, of a bright crimson tint. The dots could be seen, on close inspection, to be made up of vessels. No ulceration, and no ecchymosis. Mucous membrane a little softened in the neighbourhood of the most vivid red patches. Patches of beautifully arborescent vascularity were observed at intervals along the whole course of the small intestine, but its mucous membrane retained its normal consistence. Large intestine healthy. No ulceration in any portion of intestinal canal. Lower portion of œsophagus not injected, nor its lining membrane softened. Bladder contracted, containing about a drachm of turbid urine, which Dr. Dalton found, on examination with the microscope, was ren-

dered cloudy by the presence of a large quantity of epithelium scales, and similar to the urine found in the bladder after death from cholera. Other organs healthy.

ART. X.—*A case of Tumour in the Bladder.* By C. J. CLARK, M. D.,
of Jacksonville, Alabama.

CALLY DENSON, farmer, a large man, aged sixty-two, apparently of good constitution, had enjoyed robust health, until about two years ago, when he began to suffer from what he considered symptoms of "stone in the bladder." He voided urine with difficulty, having to strain hard to make it pass. By degrees he had to make water more frequently than usual, and suffered from constant sense of uneasiness about the bladder. These symptoms grew gradually a little worse in the course of the first year, during which time he used various domestic remedies for "gravel." After awhile he began to be troubled with constipation, for which he took cathartics; subsequently had hemorrhoids. About the end of the first year he began to notice "a hardness" in his abdomen just above the pubis, which gradually increased until he could distinguish a large roundish tumour. This he took to be an "obstruction in the bowels," as he had constantly to take some laxative to keep his bowels open. By this time he had great difficulty in voiding urine, and frequent calls to do so. Says that the urine would sometimes suddenly stop while flowing, then flow again by changing his position; and that he was frequently in the habit of going to the corner of the fence and placing the perineum against the end of a rail and making pressure, which enabled him to void urine when he could not do it otherwise. Has frequently had an itching sensation about the end of the urethra. Had very copious hemorrhage from the bowels a few months ago, probably from the rupture of a hemorrhoidal vein. Since then has not suffered much with the piles. Applied to a quack, who told him that the tumour in his hypogastrium was caused by his "melt," which had got down there; and that the hemorrhage from the bowels "came from the melt."

His urine has never presented anything remarkable; has been higher coloured at some times than at others. Has never passed any gravel. Has been for two weeks taking a nostrum from another quack, who promised to dissolve the stone in his bladder and thus cure him. After taking this a few days, he passed some blood and a large amount of mucus in his urine. This "solvent," I happen to know, is a strong solution of a peculiar kind of caustic potash, called in this State and Tennessee "wetfire," where it has obtained some celebrity in the hands of certain empirics as a caustic and solvent for urinary calculi.

Some three weeks ago Denson began to have slight fevers, and to suffer more than usual with a pain through the tumour passing down towards the perineum. The pain has continued to grow worse, the desire to void urine more constant and urgent, until within the last week his sufferings have become almost intolerable.

Jan. 1st, 1845. To-day I saw the patient for the first time, and obtained the foregoing history from him. He now suffers a constant, dull, heavy, aching pain through the tumour and perineum. He has to void urine every hour, and sometimes oftener; and it is done with great pain and straining, only a small quantity being passed at each effort. The flow of urine is assisted by pressing upwards and backwards on the abdominal tumour. Has constant fever rather of a typhoid character; some thirst; no alvine evacuations without taking medicine, and then it requires great straining to empty the bowels; countenance dejected; very low spirited; skin dry and hot; tongue rather dry, with red edges and thick fur on top; cannot turn in the bed without great pain; testicles and spermatic cord painful and much swollen. Upon examining his abdomen, I found a large tumour rising from the pelvis up to the umbilicus. Its surface felt perfectly even and smooth through the abdominal walls. I could not detect any elasticity, yet there was not a distinct sense of hardness. On introducing a finger into the rectum, a large tumour was felt filling completely the superior strait and upper part of the pelvis. It felt smooth and uniform, and distinctly elastic. I next proceeded to introduce a catheter. The instrument was arrested about the membranous portion of the urethra. At this point the passage was very sensitive, and the introduction of the instrument caused great suffering. After repeated fruitless efforts with different-sized catheters, I took a very small bougie, and succeeded in passing it through what I took to be a stricture, and into the bladder. The bougie tapered, and when the larger part came to the strictured point in the urethra it would pass no further, consequently the end of the bougie merely reached the cavity of the bladder, without passing any distance into it. As the patient had suffered greatly from the attempts at catheterism, in consequence of the inflamed and highly sensitive condition of the urethra, I determined to put him on a course to relieve these symptoms, hoping afterwards to succeed in the introduction of the catheter.

I ordered him to sit in a warm hip-bath until it caused a feeling of faintness and relaxation, and repeat as often as his strength will bear it; a laxative to move the bowels: *infusum diosmæ* with *spts. etheri nitrosi*; also some carbonate of soda; fomentations to abdomen.

After weighing all the symptoms and probabilities, I came to the conclusion that it must be one of those cases of retention of urine and enormously distended bladder that occasionally occur in old men. It is true he had passed more or less urine every day in small quantities at a time. He was of the opinion that the whole amount passed each day was small, and there had been difficulty in voiding it for two years. And we know that old men sometimes suffer

great distension of the bladder notwithstanding they pass some urine from day to day, but there is not so much passed as is secreted. I was further strengthened in my diagnosis from the fact that the abdominal tumour was perfectly uniform on its surface, that it presented precisely the shape of the fundus of the bladder greatly exaggerated, and though not elastic it did not give a sense of hardness to the touch. And further, the pelvic tumour examined through the rectum presented the shape of the "*bas fond*" greatly distended, and was highly elastic. The obstruction in the urethra I took to be a stricture, and supposed from several of the symptoms which have been previously narrated that there might also be a calculus in the bladder.

Jan. 2d. Says he feels better; that the warm bath has soothed him greatly, affording more relief than anything he has done before.

Is very feeble; had considerable fever last night; laxative has operated; had much straining at stool; has as much difficulty in passing urine as ever, but it is not of so high a colour. He insisted that I should not attempt to introduce the catheter for twenty-four hours longer, and allow him to continue the treatment prescribed on yesterday.

3d. Found him no better; had considerable fever last night; is more feeble than on yesterday; was much exhausted this morning on coming out of the bath. I now attempted to introduce the catheter again, but after repeated and persevering efforts failed. I next tried to pass the small bougie, but could not even succeed with that. I now sent for Doctors Francis and Pelham in consultation. The Doctors had great difficulty in satisfying themselves as to the nature of the affection. Thought there might be some kind of tumour in the bladder; but upon examining the elasticity of the pelvic portion, it was agreed that it must be a case of retention of urine; and at all events, if there was a tumour within the bladder, that it contained a fluid; and further, that as the symptoms were urgent and the bladder could not be expected to stand the great distension much longer, the only thing offering any prospect of benefit was puncturing through the rectum. He was accordingly placed across the bed, with his hips resting on the edge and his feet drawn up. Kneeling before him, I passed the index finger of my left hand up the rectum to the tumour. Taking a small trocar and canula in the other hand, I guided it up, and placing it against the tumour about $\frac{3}{4}$ ths of an inch from its anterior edge, pushed it in. I withdrew the trocar, and, lo! instead of urine, dark red, and rather thick blood poured slowly through the canula!! The blood discharged was inodorous, and after standing a long time seemed a little thicker, but did not coagulate. Fully a quart was discharged without producing any effect whatever on the patient's pulse. The canula was withdrawn, and upon examination the pelvic tumour was in a measure gone and the parts flaccid. Dr. Pelham now suggested that this might be a large hemorrhoidal tumour that we had evacuated, and that we might now succeed in introducing the catheter. He then took a strong silver catheter, and after a persevering effort succeeded in passing it into the bladder, when to our astonishment, instead of urine, here came the

same dark red blood again!! The nature of the affection was now revealed. We had a large bloody tumour of some kind filling the bladder and distending it until the *bas fond* filled the pelvis, and the base extended to the umbilicus, being as large as the uterus of a woman at the seventh month of pregnancy. After about a pint of blood was discharged it ceased flowing, but upon moving the catheter a little it commenced again. I now took hold of the instrument and found I could move it about through the mass, apparently breaking it up; and it seemed to require but little more force to break it up than would a mass of coagulated blood. At each time the instrument was moved and a fresh part broken the blood flowed more rapidly. Some parts seemed to be of a firmer structure than others, and could not be broken down with the catheter, though none gave the feeling of ossific or cartilaginous hardness. In all about two quarts of this dark red blood were removed, lessening the size of the tumour considerably, but still leaving it very large. The evacuation of the blood did not appear to have any effect on the patient's pulse or strength. He said he felt easier and that the weight and pain were less. We now left him under the use of fomentations and anodynes until to-morrow.

4th. Rested somewhat better; has suffered much less pain. Has not been compelled to evacuate urine so freely, but still has great difficulty. The urethra became plugged up once or twice from clots of blood. Is growing more feeble; had an alvine evacuation without so much straining as heretofore. At eleven o'clock to-day had a long shivering fit; his pulse sank, and he became covered with clammy perspiration. Says he has no pain now except when he moves.

5th. Had another rigor last night, and one this morning before day. Is greatly prostrated; pulse feeble; bathed in cold clammy perspiration; can scarcely speak audibly.

6th. Died this morning. His wife would not allow a post-mortem examination.

This rather curious and perplexing case fell into my hands a few years ago. It is now published partly for the purpose of putting it on record as a singular case; and partly to prepare my professional brethren against similar difficulties in making out a diagnosis, should any of them meet with a case of the kind. It is much to be regretted that in many of our most interesting cases we are debarred the advantages of post-mortem examinations by the people for whose benefit we live and labour.

[There can be but little doubt that the tumour in the bladder in this case was a malignant fungous growth, but it is greatly to be lamented that a post-mortem examination was not allowed.—EDITOR.]

ART. XI.—*Cases of Puerperal Convulsions.* By JOHN P. LITTLE, M. D.,
Richmond, Virginia.

THE following cases were met with whilst I was a country practitioner in Orange county, Virginia.

In forty-five cases of labour, three cases of this formidable disease occurred: these are reported in the order in which they presented; and to them is added another case, illustrating the power of the human system to resist without apparent suffering, or even sympathy, the delay and danger of a protracted and difficult labour.

CASE I.—A young, strong negro woman (servant to Mrs. Roach, of Orange Co.), pregnant with her first child, was seized with a convulsion early on the morning of the 15th of April 1847. I reached her at sunrise, an hour after its occurrence, and found her lying unconsciously, breathing stertorously, her pulse full and hard and the pupils dilated. She could be roused with difficulty, and answered at random a question asked her. A violent convulsion seized her as I sat beside her bed; it was preceded by the usual symptoms of uneasiness of body, rolling of the eyes, irregularity of the pulse, &c.; the face became distorted, the eyes turned up, foam flew from the lips, and the whole muscular system was violently convulsed. Immediately the arm was tied up, and as soon as the convulsive efforts allowed it, a vein was opened by large orifice; the amount of blood was not measured, as effect alone must regulate the amount of bleeding in such cases; she was bled into a state of semi-consciousness. Antispasmodics and purgatives were administered. The mouth of the womb was open, as in the commencement of labour; the lips thick and rigid, scarcely if at all dilated under the contractions of the womb. There was every prospect of a difficult, tedious, and dangerous labour. Another and another convulsion appeared, with a shorter interval as the labour slowly advanced; between them she lay comatose.

Every means was used to relax the mouth of the womb, to hasten the labour, and to avert the danger to the system from the shock of the convulsions. Warm fomentations; dilatation with the fingers; bleeding largely twice repeated, according to the indications of the pulse and the convulsion, and each time with good effect.

The free depletion by venesections and purgatives mitigated the severity, yet the continuance of the labour increased the frequency of the convulsions.

The head, a very large one, was impacted in the superior strait; the os uteri although rigid was somewhat open; the womb was acting strongly and the woman in convulsions. I decided to open the head, and deliver as rapidly as possible. Dr. Graves being called in consultation and agreeing with me, I proceeded to deliver; placing the woman in the usual position, the head was opened and as much as possible of the brain removed; then, compressing the bones of the cranium, with much difficulty the body of a very large foetus was withdrawn.

A violent convulsion occurred during the delivery, and another preceded it; making in all ten violent convulsions during the twelve hours that elapsed from the occurrence of the first one to the delivery. The womb seemed to have exhausted itself; it remained relaxed, and hemorrhage came on; by stimulating the womb and by injection of infusion of ergot this tendency to flooding was overcome; not, however, until she had lost much blood. I hoped

that with the delivery the convulsions would cease; as another fit occurred, and she still lay comatose, I shaved the head and cupped freely the nape of the neck; the blood flowed very freely from the scarifications.

She passed the night in a comatose condition; symptoms of another fit showing themselves, and the pulse justifying it, she was again bled on the second day of attendance; on this occasion she flinched from the lancet. Her head was now covered with a blister (one had after cupping been applied to the nape), and after it had freely drawn, as she still lay in a state of stupor, a warm poultice was applied over the whole scalp, having previously clipped the blisters and covered the poultice with spirits of turpentine. This was done on the afternoon of the second. She exhibited symptoms of uneasiness at this application; yet it was not until suppuration had been freely established over the whole scalp (although antispasmodics and purgatives with diuretics had been freely given and with effect), that she, on the morning of the third day after her delivery, opened her eyes and appeared conscious. She was not able to speak, yet made known by signs that she wanted drink and food; it was most singular to see her eye and gesture asking to satisfy her appetite, yet possessing neither speech nor hearing. As there was still a tendency to stupor, and as all the faculties had not returned, the applications to the head to encourage suppuration were still kept up.

Speech and hearing and intellect gradually returned; in the course of four or five days she could give some account of herself; and I found that she was utterly unconscious of all the circumstances connected with her labour. The lochial discharge was encouraged by warm fomentations and attention to cleanliness. She made a rapid and perfect recovery; and, undeterred by the failure and danger of her first experiment, has since borne with safety to herself living children.

In reviewing the case, I regret that I did not cup earlier, and apply cold to the head; it should be done in all such cases. Of the quantity of blood lost I cannot speak accurately; she was four times bled, there was hemorrhage, and a very free cupping on the nape. The venesections were regulated according to effect, and not according to quantity; and this I esteem the only safe rule of guidance in similar cases.

The two other cases occurred in women who had each borne many children. They had been accustomed to be bled freely during pregnancy, by way of removing hyperæmia; and the bleeding had been either very slight, or altogether omitted before their last labours.

CASE II.—A servant (40 years of age, pregnant with her twelfth child, in whom from a tendency to anteversion of the womb her labours had been more and more difficult), was taken with convulsions March 14, 1848.

Her situation not being known, as she lived some distance from her master's house, she lay twenty hours in this condition, having convulsions, and lying comatose between them. I saw her in the tenth; and immediately opened a vein, drawing off some three pints of blood. The convulsion ceased, yet not even semi-consciousness returned. The bladder and rectum were emptied, cathartics were administered, and the head elevated and kept cool.

On examination, the mouth of the womb was found tilted backwards in the upper part of the vagina, and very slightly open. With some difficulty it was brought down, and by assisting each pain, gently opened with the fingers; the head presented, the occiput placed towards the left sacro-iliac junction; the

head was then pushed up, one knee seized, and delivery effected by turning; the child was dead. This was not accomplished until several convulsions had occurred, and a second bleeding, not so large as the first, had been made. She lay comatose; and with the exception of one convulsion after delivery, remained so for two days, and then died. In this case also the scalp was shaved and counter-irritation used. Serious mischief had resulted from absence of medical aid in the commencement, and no subsequent treatment could remove it.

CASE III.—Mrs. Jacobs, of middle age, the mother of several children, a woman of strong constitution and robust health. After a few days' indisposition, she was taken with convulsions July 14th, 1849. A physician being called in, she was freely bled, and on their return was again bled.

I was called in consultation on the morning of the 16th; she was then in a convulsion, which made the eighth during the two days of attack. I instantly tied up her arm, and bled freely, until a state of consciousness returned, and she could answer my questions.

On examination, the mouth of the womb was found slightly open, and the head presenting, yet no contractions of the womb were perceived.

She lay as one sleeping heavily, yet could be roused with difficulty. My advice was to stimulate the womb to contract, by dilating the orifice with the finger; if this failed, to use ergot by injection, and to rupture the membranes, turn, and deliver. I have always found it safer to use ergot in this manner than by the mouth; it does not disagree and cause vomiting, and its effects can be obviated by washing out the rectum, if considered necessary. My plan is to give by the rectum the dose usually given by the mouth, repeating it as the indications require; and when given in this manner it appears to excite rather the alternate contractions of the womb, than that peculiar tetanic action following larger doses. Its effects may be guarded by opium given with it; which, while it does not appear to affect the womb's contractions, mitigates the severity of pain. In this case the contractions came on regularly, the membranes were ruptured, and my colleague, losing the opportunity of turning, allowed the head to descend.

The woman, conscious of pain, though not of the cause, struggled and complained. Her pulse rising, and symptoms of convulsions appearing, I reopened the vein, and allowed blood to flow until they ceased, and she became conscious. The contractions came on with force, the instinct of labour seemed to lead the woman to cease her uneasy struggles, and to bear down until delivery was accomplished by the expulsion of a dead child; a tendency to flooding was manifested, and checked by pressure, by injections of ergot, &c.

Her convulsions had not been powerful, and her comatose condition not complete, as she seemed conscious after delivery. I left her in the hands of the attending physician. Convulsive action, however, came on, and stupor, although purgatives and diuretics had been employed; I had the head shaved, blistered and poulticed as in former cases; consciousness returned when the scalp was pouring out serum, and remained. In the four bleedings in this case, half an hundred ounces of blood were lost. There was in none of these cases the profuse perspiration that usually accompanies labour; the want of free sweating is said to be one of the accompanying symptoms of the disease.

CASE IV.—A young healthy negro woman (servant to Mr. Hudson, of Culpepper Co.), pregnant with her first child, had been in labour three days when I was summoned in consultation. June 8th, 1847. I found her lying perfectly free from pain, pulse natural and skin cool; without any apparently

bad symptom except the continuance of the labour; the head presented; the membranes were long since ruptured, and the perforator had been used to pierce the head. I first gave ergot by injection, to cause contraction and prevent flooding in delivery; and then broke up the brain and delivered a very large boy. In spite of the ergot, flooding showed itself, and it was necessary to introduce the hand into the womb, turn out the clots, and make pressure within and without; contractions came on and with care were kept up.

The bladder was found enormously distended; the urine had been accumulating during the whole time of labour. So long-continued distension produced atony; and it was some time before the use of the catheter, and of that class of diuretics which act especially on debilitated fibre, as buchu, tinct. cantharidis, &c., could be dispensed with.

She recovered slowly, yet without a bad symptom. I should have supposed this a case where convulsions, or some severe consequent of labour, might have been expected.

Puerperal convulsions or eclampsia is attributed to many causes; to congestion of brain; to irritation of spinal cord, or of excito-motor system of nerves, either directly or sympathetically; to pressure made on sacral nerves, or to toxæmia, caused by pressure of gravid uterus on kidneys, preventing secretion and elimination of urea, and producing a poisonous state of blood.

The most satisfactory opinion to my mind is that its primary cause consists in the hyperæmic condition of system which belongs to pregnancy.

That the contractions of the womb, and the pains of labour, react sympathetically on the nervous centres, causing an increased flow of blood to those cavities, thereby producing convulsive action, and its consequence, stupor. That the presence of the foetus in utero is, therefore, the proximate cause of convulsions. And that the most judicious plan of treatment consists in the early and free use of the lancet (used according to effect alone), and then in accomplishing the delivery as rapidly as is consistent with the safety of the mother. That, as incident to this treatment, should be used free evacuation of the bladder and rectum; cold to the head; cupping to the nape of the neck; and if the uterus become flaccid and inert, an enema of sp. turpentine, or of ergot, may be administered; the latter especially if hemorrhage be feared.

That if the state of stupor continue after convulsive actions have ceased, counter-irritation over the whole scalp, and even suppuration should be brought on.

Opium has been recommended in large doses by Dr. Robert Lee, and by Dr. Meigs, after free blood-letting, to calm the sympathetic excitement of nervous system.

In none of these cases did I dare make use of it; in fact, the tendency to cerebral congestion and effusion is so great that I should hesitate to use it, and certainly not until the delivery had taken place, as the continuance of parturition would keep up the tendency to convulsions.

The opinion of Burns, that pressure on the sacral nerves is one cause of

convulsions, should have weight enough to cause frequent change of position for our patient. And the proof advanced by Cormack and Simpson of Edinburgh, that albuminous urine accompanies puerperal convulsions; that urea exists in the blood; moreover, that in all such cases there exists very little perspiration, by which elimination of poisonous matter might take place instead of by the kidneys; this is sufficient to justify the use and explain the benefit of diuretics and laxatives in all such cases.

The disease may be averted by preventing its causes; and when it has made its appearance, if not early closely attended throughout, and properly treated, may be considered a disease very much under our control.

ART. XII.—*Notes of a case of Poisoning by Arsenic.* By BENJAMIN W. ROBINSON, M. D., of Fayetteville, N. C.

ON the night of the 8th of November, 1849, I was hurriedly summoned to Mr. Alex. C. Simpson. Found him with a countenance evincing great anxiety and distress, surface cold, pulse extinct, respiration somewhat hurried, and complaining of intense pain, which he referred directly to the epigastrium, with a sense of sinking at the precordia. To allay the pain, which he declared to be insupportable, I was in the act of administering a dose of morphia, when his medical attendant, Doct. Mallett, entered the room. The Dr. agreeing, twelve or fifteen drops of Magendie's solution of sulph. morphia were given. From Dr. Mallett, I learned that he had been called to the patient about ten o'clock that morning, when he was informed that Mr. S. had been sick all the preceding night with nausea, vomiting, thirst, and pain at the pit of the stomach. These symptoms existed at the time of Dr. M's. visit; the patient's pulse was rather small and feeble, which was ascribed to nausea, and he vomited some mucous matters tinged with bile. Dr. M. ordered a mustard poultice to the epigastrium, and a pill consisting of five grs. calomel and $1\frac{1}{4}$ grs. opium as soon as the stomach could retain it—to be repeated in two hours. Saw him again in the afternoon; was told that during the interval of his visits Mr. S. had had several dark and fetid evacuations from the bowels. Finding his symptoms aggravated, Dr. M. directed a dose of morphia, and left with a promise to see him again after tea. To rally his rapidly failing powers, we gave ammonia and brandy in repeated doses—administered an enema containing brandy and quinine—had frictions practiced with dry mustard—warm applications to extremities, and hot poultices to the abdomen.

A few moments before he expired (which was in less than an hour after I entered the room), he was raised to the sitting posture, and on being laid down gasped a few times. I quickly placed a piece of paper saturated with spirits

of turpentine over the region of the heart, and swept across it the flame of a candle—but that heart had throbbed its last. Here was death by asthenia. Neither coma nor delirium had at any time existed. No vomiting or purging while I was present.

As we rode from the house speculating as to the cause of death in this case, and unable to arrive at a satisfactory solution of the question, it was suggested that a post-mortem examination for our own satisfaction should be proposed to the family, which the doctor promised to make next morning. He did so to Mrs. Simpson, who, after manifesting what was deemed a very natural reluctance, consented. She however subsequently declined permitting it, moved apparently by the repulsive feeling excited in the mind of a near female relative. During the day, suspicions of foul play were rife in the community, and a coroner's jury was summoned to inquire into the facts of the case.

On the morning of the 10th, James T. Gilliam, M. D., William P. Mallett, M. D., James A. McRae, M. D., and myself, were requested to appear before the jury of inquest and institute a post-mortem examination.

Autopsy thirty-eight hours after death.

Nothing peculiar in the appearance of the body. On opening the thoracic and abdominal cavities, a notable degree of preservation and entire absence of cadaveric odour were remarked.

Head. Not examined.

Thorax. Lungs apparently healthy. Right adherent to costal pleura by a band evidently of non-recent formation. Left collapsed. Heart removed, subsequently minutely examined; no evidence of disease, however, could be discovered.

Abdomen. The stomach, duodenum, and some thirty inches of jejunum, showed very decided marks of inflammation. Larger intestines remarkably contracted and pale. Liver, spleen, and kidneys examined superficially, in situ, discovered no abnormal appearance. Bladder contracted and empty. A ligature was tied above the cardiac orifice and another at the point on the intestinal tube, where the diseased appearance ceased and the parts included removed.

Some hours subsequently, the stomach was laid open, and found to contain thirty to forty ounces of reddish-brown bloody-looking fluid with some semi-solid matters. Its inner aspect presented marks of a high degree of inflammation. Numerous erosions of the villous coat varying in size (the largest situated near the cardiac opening must have measured seven or eight lines in length by three to five in breadth) were revealed, in and around which chiefly were patches of white agglutinated particles. A less intense, though very marked redness pervaded that portion of the intestinal canal which had been removed in which no erosions or ulcerations were detected.

A portion of the fluid contents of the stomach, which had been received in a clean vessel, was put into a dish over the fire and evaporated very nearly to dryness. With distilled water, the residuum introduced into a clear Florence

flask was boiled for half an hour and then filtered through paper. Tests were prepared by dissolving sulphate of copper and nitrate of silver respectively, and adding to each solution a solution of ammonia till a precipitate was thrown down and then nearly re-dissolved. To a portion of this filtered liquid in a clean glass a few drops of the ammonio-nitrate of silver test were added, resulting quickly in a light yellow precipitate, which afterwards changed to a brownish colour. To another portion in a separate clean glass, the ammonio-sulphate of copper test being added, produced a green-coloured precipitate—apple green. With another portion we tried Reinsch's test. After adding to it in a tube a few drops of hydrochloric acid—which we had reason to believe was chemically pure—a few pieces of bright copper were dropped in, and the liquid boiled for a few minutes till an iron gray coating was deposited on the copper. The metal was removed, washed and dried, and then placed in another (short) tube and strong heat applied, resulting, however, in no distinct sublimation. With a known solution of arsenic, the copper test was tried with a result agreeing precisely with that just named. A decoction of beef with bright copper was subjected to the same process, but no perceptible change occurred in the metal. The two liquid tests were applied to a known solution of arsenic, and gave results precisely similar to those noted as occurring on their addition to the suspected liquid. Some of the white particles from the stomach, placed on a bit of charcoal, ignited by a blowpipe, gave off a vapour in which the garlic odour was recognized.

It was here suggested that more confidence in the results of our investigations might obtain on the part of the community, if the Reverend Doctor Colton, who was favourably known here as a lecturer and practical chemist, were associated with us. He was accordingly invited, and joined us on the succeeding day.

Second series. Conducted by Mr. Colton. After using the two liquid tests before prepared, with results corresponding with those previously obtained by ourselves, he alkalinized two drachms of the suspected liquid with three grains carb. potass., and added two drachms of a solution of sulph. copper (two to five grs.), causing a grass-green precipitate. Water charged with sulphuretted hydrogen gas was added to some of the suspected liquid, producing a yellow colour, which resulted after some hours in a sulphur yellow precipitate. A portion of the green precipitate (suspected arsenite of copper), after being dried on a filter, was put into a tube—similar to that described as Clark's, save that the bulb was relatively larger and stem narrower—with charcoal, and subjected to heat with a spirit-lamp. A ring of iron gray colour and metallic lustre formed in the neck of the tube, to which heat being applied minute distinct crystals sublimed on the cooler part of the stem.* Correlative experiments of the liquid and reduction tests with known arsenic

* Dr. Colton, in his evidence before the court, did not speak of this ring as the reduced metal, but testified to the crystals. The text here is from *our* notes. His were not

gave results corresponding respectively with those just described. Some of the green precipitate (suspected) put into a platina spoon with charcoal under blowpipe heat exhaled the garlic odour, distinctly marked—as also did some of the white particles picked from the stomach treated in the same way.

From these facts, observations, and experiments, we deduced the opinion—and reported to the jury—that Alexander C. Simpson had died from the effects of an irritant poison, and that that poison was arsenic. Other testimony before them tending to inculpate the wife of the deceased, they agreed upon the verdict “that Alexander C. Simpson came to his death by poison received in his stomach, and they are inclined to think that the poison was administered by Mrs. Ann K. Simpson, the wife of the deceased.”

Before the warrant issued for her apprehension could be served, she escaped and fled the country, but returned on the eighth of November, 1850, and surrendered herself to the sheriff. On Thursday the fourteenth, she was put upon her trial for murder.

Pending the interval of her return and arraignment, another series of experiments was made with some of the white particles from the stomach which had been received on bibulous paper carefully folded up, enveloped, labelled, and put away. These experiments were conducted by Mr. Samuel J. Hinsdale, a very intelligent and accomplished practical chemist of this place, who was absent from town at the former investigations—Doctor Mallett, Doctor McRae and myself being present and assisting.

Third series. Some of the white particles were put into a tube with a flux of dried carb. potass. (two parts) and charcoal (one part), and subjected to the heat of a spirit-lamp till a well-marked ring of iron gray colour and metallic lustre, presenting on its inner face a distinctly crystalline appearance, was produced. That portion of the tube on which the crust or ring had formed was cut off by a file and placed in a larger test tube, heat applied with the spirit-lamp, and crystals in some abundance deposited on the cooler part of the tube. Distilled water was then added and boiled till the crystals were dissolved. To one portion of this solution, the ammonio-sulph. copper test was added, resulting immediately in a precipitate of greenish colour. To another portion, a few drops of the ammonio-nitr. silver test, with precipitate of light yellow resulting, which shortly changed to a brownish hue. Into a third portion sulphuretted hydrogen gas was introduced, producing quickly a sulphur-yellow colour, and, on being heated and acidulated, giving down a yellow precipitate. Mr. Hinsdale also tried Marsh's test with a satisfactory result, as I learned from him. I was not present during the whole of the experiment.

made at the time, but subsequently. He was certainly understood at the time as agreeing with us in our appreciation of it.

That this had the true characters of the *arsenical ring* confirmed by the correlative experiment with the known arsenious acid, and that in so carefully conducted an experiment as this was it was a condition necessarily precedent to the sublimation of the crystals, I respectfully submit.

Of the medical witnesses, Dr. Mallett and myself only were examined. Rev. Dr. Colton testified to the results of his experiments, corroborating our opinion.

It was in evidence that the prisoner had purchased an ounce of arsenic a few days before Simpson's death. That they did not live happily together. That she acknowledged a fondness for another man—had only married Simpson to get a home—had consulted a fortune-teller about a week before his death, by whom she was told he would not live a week, &c. It was also proved that she had prepared two glasses of syllabub, which he ate at dinner on the day on which he sickened, and at tea had given him a cup of coffee, both presented under circumstances which, being subsequently recurred to, excited suspicion—and that her conduct just after his death betrayed such destitution of proper feeling as to provoke censure.

It was charged in the bill of indictment that she had administered arsenic in the syllabub, and again in the coffee.

Although not in evidence before the court, it might have been proven* that Mr. S. complained of nausea, and vomited soon (probably within half an hour) after dinner. The trial occupied the whole of Thursday and Friday, and was continued till 4 o'clock A. M. on Saturday. After retiring from one to three hours (variously stated), the jury returned a verdict of *Not Guilty*.

Remarks.—It has been a matter of regret to me that other organs—more especially the liver, rectum, and genito-urinary organs—could not have been more particularly examined, but the circumstances and restrictions as to time under which we were placed operated to prevent it.

It was in evidence, and will here be seen, that Reinsch's test was not satisfactorily completed. When it is stated that, having broken some of our tubes, and no more suitable apparatus being immediately available, we were driven to the use of a thin 3ij vial, not longer than two and a half inches, and that our strips of copper were at least an inch long, the reason will be sufficiently obvious. It was laid aside with the purpose of taking it up again, but omitted, as the chemical evidence from other sources was deemed conclusive.

Pert counsel spoke flippantly of "inexpert doctors and chemists." Expertness in the anatomical and chemical manipulations could only have been rightly judged of by a competent observer—as a gratuitous assumption, therefore, it may pass for what it is worth. Whether or not we have betrayed a

* It is very far from my purpose here to impute blame to the counsel for the State, who, for the firmness, faithfulness, and ability exhibited in the discharge of their whole duty, richly deserved the high commendations bestowed on them by those present. It must be remembered, too, that they had but two or three days of a busy week, with other duties pressing heavily, to prepare for the trial so suddenly sprung on them. It is proper, however, to state that I was informed by a gentleman of unimpeachable veracity, that he met Simpson going from dinner on the day referred to—and probably in less than half an hour after he had eaten it—who complained to him of being sick and did vomit. This gentleman, because of his unwillingness to be called to the witness stand, avoided speaking of this fact till the testimony was closed.

want of expertness in arraying an amount and kind of testimony equivalent to irrefragable proof of the existence of and death from arsenic in this case, we prefer to submit to our peers, in the belief that they are somewhat more competent to determine the question than a Bar suddenly learned (on this point) or a Jury astutely picked.

[The medico-legal evidence in this case is entirely conclusive as to the death being produced from poisoning by arsenic. The stomach gives evidence of the action of a corrosive poison; the liquids of the stomach, although not deprived of animal matter, produce with the appropriate reagents signs characteristic of arsenious acid; the reduction test gives a metallic ring, which by the action of heat and air is converted into crystals; these crystals dissolved in water and tested afford precipitates, with proper reagents, which under these circumstances could only result from the presence of arsenic, a chain of evidence in which no links are wanting.—R. B.]

FAYETTEVILLE, N. C., *December 2d*, 1850.

ART. XIII.—*Case of Hydrophobia*. By J. WILSON, Jr., M. D.

I HAVE thought that the following case, which occurred in my practice near Holmesburg, Pa., in 1840, should be reported, not because it is expected to throw much light upon the pathology, or lead to a more successful plan of treatment, but as it adds something to our statistics of this terrific disease. I have delayed the report so long, because I thought it desirable to wait and see whether any bad consequences were to result to the other individuals bitten by the dog which inflicted the wound in this case. The following account of the symptoms and of the treatment pursued is transcribed, with but little alteration, from notes made during the progress of the disease.

Charles Baker, aged 20, sanguine temperament, small but robust, and of active habits, having been usually engaged in the laborious occupation of a farmer—came to visit his friends on (Sunday) May 24th, 1840, and amused himself in teasing a little dog—by pinching its tail and other means of annoyance—till the little enraged animal accidentally (?) caught his thumb—whether right or left could not be determined. The sport ceased, the thumb was wrapped up, and soon healed; he went about his business, and no more was thought of the matter till June 17th, two days after hydrophobic symptoms had occurred, when I received the above account.

He returned on Monday, June 15th—three weeks after the accident, said he was unwell, and felt weak, but made no more particular complaint; asked

for some water, and when it was offered to him, pushed it away, saying he could not drink it. He was offered some jelly, but could not eat it. On Tuesday, he tried to drink once in the course of the day, but the attempt created so much pain that he relinquished it.

June 16th. Tuesday evening.—At the time of my first visit, he was dull, stupid, and disinclined to say anything; answered questions by monosyllables, though quite rationally; said he had no pain; felt weak and uncomfortable; complained of oppression as if from a heavy weight upon his chest; respiration natural, except that he could not make a very full inspiration; eyes a little red; pulse 70, rather full, natural—attributed his disease to drinking too much iced lemonade on Sunday. There was so little appearance of disease that I should have thought it all pretence, but for the difficulty of suggesting a motive. He was offered some water, when the following phenomena ensued: Anxious respiration, quick and convulsive; a corresponding convulsive movement of the hand in which he held the cup; general trembling and anxiety; compressed nostrils. He succeeded in about half a minute in throwing it into his mouth (as if by an act of desperation) and swallowing a little; when he hurriedly lay down and composed himself. He was afterwards offered a piece of dry bread, which he ate without apparent inconvenience. I felt assured of the presence of this awful malady; and from the fatal termination of every case, of which I had either heard or read, of the utter hopelessness of the case. (Directed a teaspoonful of laudanum, to be repeated in an hour if necessary. Hydrarg. chlorid. mitis gr. xx.)

17th. He was tolerably quiet all night, but did not sleep; still talks rationally; thirst increased; increased dread of water; convulsive movements about the throat, with anxious respiration on the least excitement, as the opening or shutting of the door, a current of air, the admission of a little more light than usual, or the approach of a stranger to his bed; pulse not much altered; no alvine evacuation for three days. (Calomel gr. x; cambogiæ gr. j; morphiæ sulph. gr. ss. every hour till he sleeps or becomes easier. Epispastic to the nucha.) He became more quiet after the second dose of morphia. The cathartic operated well. The blister was fully raised in about five hours from the time of its application. The medicine was administered by sprinkling it upon a piece of bread.

7 o'clock P. M.—He swallowed about fʒi of water, with considerable exertion; took the sulphate of morphia seven times in the course of the day; it is said that he showed a disposition to bite. (Blister to be dressed with ungt. hydrargyri; morphiæ sulph. gr. j, to be sprinkled on the blistered surface; mercurial frictions; morphia to be increased gr. j every hour, watching its effects.)

18th. 6 o'clock A. M.—He was restless all night, profuse perspiration; pulse full, bounding, not very rapid; drinks better.

12 o'clock M.—Swallows fluid better; pulse thready; precordial oppression excessive; some pain in the right arm, which he supposed to arise from

having been bruised by a horse (perhaps he was bitten in the right thumb). (Blister to the epigastrium; small blisters on the right thumb; calomel gr. xv. to be repeated in two hours, unless the first dose produce an evacuation.)

8 o'clock *P. M.*—He swallowed some water naturally this afternoon; appeared much more calm and comfortable; slept about half an hour between two and three o'clock this afternoon; has taken gr. xiv. sulph. of morphia since last evening. (Calomel gr. xv., to produce an evacuation.)

19th. Paroxysms are rather more violent; there has been no alvine evacuation since the 17th; he attempted to bite last night? appears to be perfectly harmless; swallows water as well as he did yesterday morning; is more delirious. (Continue the morphia; extr. aconiti gr. ss. every two hours; a cathartic enema.)

20th. He is more delirious; hardly recognizes any one; swallows tolerably well; moderate ptialism; mercurial fetor and slight ulcerations about the roots of the teeth; pulse not so full as yesterday; skin cool and moist; no evacuation since the operation of the enema. There is no appearance of approaching dissolution. (Morphia sulph. gr. j. every two hours, alternating with extract. aconiti, gr. ss; calomel, gr. x.)

Evening.—He was quite delirious—weak—pulse fluttering, occasionally intermitting. The secretion from the mouth (or fauces) was viscid and dark-coloured, having the appearance of a more consistent dark substance diffused through a pearl-coloured liquid. He propelled it to a considerable distance as he lay on his back; it sometimes passed a yard beyond the foot of his bed. There was a peculiar motion about the throat just before he discharged his sputa; somewhat like that produced by the attempt to swallow water; his features were mostly in motion; there was a peculiar motion about the mouth; risus sardonicus occasionally for a few moments at a time; eyes red and glassy; oppression of the stomach. Difficult respiration, irregular, and sometimes intermittent. He would omit to breathe for the time occupied by one, two or three respirations, and then respire rather quickly (pant) for a few minutes. He became less manageable in the course of the evening; was restrained by fastening a sheet loosely across the bed; as soon as he discovered this contrivance (three or four hours before his death), he became outrageous, and continued unmanageable till death terminated his sufferings at 3 o'clock on Sunday morning, June 21st, 1840, twenty-seven days after he was bitten, six days after the appearance of the first symptoms, and four days after he was first subjected to medical treatment.

The difficulty of swallowing liquids was a prominent symptom throughout; it was greater on Wednesday (the next morning after I first saw him) than at any other time; on Thursday afternoon he drank half a teacupful without much trouble; his thirst continued and he took more or less water every day, and occasionally without much pain.

Continued restlessness was present throughout; he slept more during the whole week before his death, except about half an hour on the 18th.

Thursday, he was mostly somewhat delirious especially during the last day, but was perfectly rational when spoken to, or when he had something to fix his attention; and what is remarkable, had not the least conception of the cause of his disease, but continued to blame the cold lemonade.

He ate nothing of any account throughout the whole course of his disease except the bread on which his medicine was administered.

He complained of no particular pain, except headache, once or twice, and a little pain in his right arm where he had been hurt by a horse. But he continually cried "Oh! oh! oh!" which, with his anxious countenance, tumbling and tossing, presented an appearance of suffering of which no description could afford any adequate conception.

The symptoms in this case seemed to differ from those of tetanus which I have seen, principally in the total absence of anything like the tonic rigidity of muscles observed in tetanus; the character of the convulsive movements, which presented more the appearance of tremors than convulsions; the greater irritability and intolerance of light; the power of any trifling exciting cause to produce a paroxysm.

There was but little susceptibility to the action of *narcotics*. Tuesday night he took two teaspoonfuls of laudanum, without any appreciable effect. On (Wednesday) 17th, he was directed gr. ss. morphiae sulph. every hour till he became easier, which occurred soon after he took the second dose. In three hours he was as bad as ever, and began to take it again. At night the dose was doubled and continued, with the effect of producing some drowsiness and a short nap on Thursday; more ease and an ability to drink without so much trouble. The medicine was continued at this rate as nearly as could well be accomplished with attendants, who were very much afraid to trust themselves in his way; indeed, there was a difficulty of administering any medicine throughout the course of the disease with proper regularity, except when I was present to attend to the matter myself. Some extract of aconite was prescribed during the last day, but it was not administered with any degree of regularity on account of the rapidly increasing delirium. I was induced to use the large doses of sulphate of morphia in this case from having observed its beneficial effects in two cases of traumatic tetanus, which terminated favourably, in which it was used in very large doses, almost to the exclusion of other remedies, and in one of which the water dread was quite as great as in this case. If it should ever be my fortune, or misfortune, to treat another case of this disease, the salts of morphia would be liberally administered, since we are not acquainted with a more active or more certain medicine of its class. Two remissions of the disease seemed evidently to depend upon it; the aconite would probably be omitted, as the delirium increased very much soon after it was administered, and continued constantly till death terminated the case. This, however, is partly if not wholly to be attributed to the progress of the

disease and the omission of the morphia on the alternate hour. Its uncertain strength is another serious objection to the use of aconite in a disease which requires large doses and promptly administered.

Cathartics operated well, considering that there was so much laudanum administered at the same time; indeed, much better than could have been expected in a disease so seriously involving the functions of the whole nervous system. I should not much wonder if the alimentary canal were yet discovered to be the best surface for the application of our counter-irritants in this disease.

Blisters drew very promptly. One placed on the nape of the neck was fully raised in five hours from the time of its application; and another placed on the epigastrium acted quite as promptly.

He was evidently salivated on Saturday the 20th. The mercurial fetor was very evident, with slight ulcerations about the roots of the teeth. The blisters had been dressed with mercurial ointment, and frictions employed to the arms and thighs; he had likewise taken several large doses of calomel with a view to its cathartic effect.

Blood-letting was not employed in this case, although it is so universally recommended and as universally practiced, as if it is ever to do any good in these cases it should have been made to appear in some of the numerous instances in which it has been tried. I am not, however, disposed to find fault with it while I have nothing better to offer.

The dog which inflicted the wound in this case appeared more irritable than usual the day before, as appeared from his biting the cat, refusing his food, &c. He bit two individuals, a man and a boy—they were both fond of the same kind of amusement, the one on the hand, the other on the bare foot; the next day after, he bit Baker. He escaped within an hour or two afterwards, and has not been heard from since. This occurred May 25th, 1840.

Neither of the individuals bitten has as yet suffered any inconvenience except a little fright. As neither of these was alarmed till after unequivocal symptoms of the disease were present in the first case, I advised them to do nothing, that there were not more than one in twenty of those bitten by rabid animals who suffered in consequence, and that as one had already suffered, we should probably hear of nineteen others being bitten before another would suffer from the disease; that in fact their danger was inconsiderable; that I knew of no remedy likely to be of any use, except as it might tend to allay their anxiety; that they might as well go to Mrs. — (of whom they spoke as professing to have a certain remedy), or any other old woman, and take her medicine, as they would almost certainly add two to the well-authenticated cases of the successful use of her prophylactics. This was the course pursued; the old lady assured them that they need not fear after taking her medicine: her prescriptions were faithfully attended to, and so far with perfect success. They gradually ceased to be alarmed, and in the course of a few weeks, after

the excitement in the neighbourhood had ceased, appeared to have no more anxiety about the matter. The remedy which they used appeared to be the root of the elecampane, &c., according to the formula given in *Rees's Encyclopædia*.

I hope my advice was correct, although I did not feel quite all the indifference I professed. One was bitten on the bare foot, the other on the hand among tendons and bones; nor could the precise point be indicated, thus rendering it altogether impossible to have removed the part, without amputating the foot and hand. This I suppose no prudent man would have advised, and in regard to the thousand-and-one certain remedies, the evidence is not of a nature to induce us to place reliance upon any of them. And to have talked of these things without caring to carry them into effect would merely have tended to increase the anxiety and mental depression, which are prominent symptoms of the disease, and may perhaps occasionally act as an exciting cause—at all events could do no good. I imagine that I did not much exaggerate their chance of immunity, since we only hear as a general rule from such as suffer, whilst those who are bitten and escape are only known for the most part among their own immediate acquaintances. And Mr. Hunter gives an account of twenty persons bitten by the same animal, only one of whom suffered from the disease. It must, from the above considerations, and from the rarity of the disease, be impossible to estimate with any probable degree of certainty the proportion who escape. I should certainly have given a larger estimate in this case if I had thought it would tend more powerfully to allay their anxiety.

ART. XIV.—*General Paralysis from Abscesses in the Cerebellum.* By
SAMUEL CHAMBERLAINE, M. D., of Philadelphia.

A. B., æt. 40, married, of thin, spare habit, was attacked suddenly with a "fit" about four weeks ago, while walking in the street. Giddiness and involuntary clonic contractions of the left arm are the chief symptoms; he did not fall; did not lose consciousness; got home of himself. On getting into bed, similar convulsive movements attacked the left leg. Dyspnoea and foaming at the mouth occurred. He has not been able to walk since, nor can he get from and to his bed without assistance.

His health has not been good since he had syphilis four years ago; but has been worse since he received a blow on the back of his head and neck, by a trunk from the top of a stage in which he was upset about two years ago.

Cups and blisters to nucha; purges and stimulating embrocations to his limbs had been prescribed and used; his headache has been relieved and his limbs have regained some power.

March 20th, 1850.—Present symptoms: His countenance has an expression of weariness rather than of pain. He lies upon his back, unable to rise, but can use both arms and legs. His movements are slow and difficult; his muscles do not obey his will promptly; his knit brow and fixed eyes show that all his energies must be concentrated upon his right arm, that he may carry his hand to mine; the left he moves more readily and more promptly. His grasp is tolerably strong in both hands; but stronger in the left. His strength quickly fails; he cannot maintain his grasp more than a few seconds; it is relaxed, but the fingers are not unclasped; it is only by directing his attention to it that he opens his fingers so as to free my hand from his.

Sensation appears to be normal. He says he feels my pinch equally in both arms, and has in both equally good perception of what he holds; he does not loose his grasp, nor require to keep his eye upon what he holds in order to retain it in his hand. The reflex power is therefore normal.

His animal heat is very soon lost; a few moments exposure of his arm out of the bed is sufficient to make it extremely cold; and this he says brings on a return of the "spasms of the arm." Yet he does not feel the cold, nor does he perceive the cold wall with his feet, which his wife sometimes finds completely chilled by it, and he not aware that they were against it; to the touch they are extremely sensitive, being *tickled* beyond his endurance by the least handling. His eyes are natural; pupils normally sensitive to light; not dilated. Tongue natural; is protruded with ease and promptness; not turned aside. Stomach rejects food frequently; a very slight exertion causes vomiting. Bowels extremely costive; were pretty regular till a month ago. Pulse extremely weak, small and very slow. Spine examined by careful pressure on each vertebra; there is no pain at any.

25th. Had a slight return of the "spasms of the arm" on yesterday. To-day he appears to be weaker; his voice is faint and weak; his mind acts slowly; he replies to me only after an interval of a minute or two; but his replies are then correct and to the point. He protrudes his tongue slowly; seems to hold it out with his teeth; his lips remain grinning, only slowly regaining the natural position. He squeezes my hand with great effort; it evidently requires him to summon all the powers of his will to squeeze it at all. His left hand possesses more power than the right, but it costs him the same effort to use it.

29th. He has vomited every day; generally soon after eating, but always when he is worse or makes any effort to move himself; sinapisms have had no effect in restraining it. Hydrocyanic acid has appeared to arrest it. He has gained some strength since the "fit" of the 24th; his mind as well as his muscles acting now promptly.

30th. His wife reports a "severe fit" last night, and frequent vomiting. He is stupid; his brows contracted; his mouth quivers in the attempt to speak, but he says nothing. Cups to his temples; strychnine gr. $\frac{1}{16}$, three

times a-day, and hydrocyanic acid to be repeated or not, according to the frequency of the vomiting.

31st. He exhibits more strength than I have seen in him before; he takes the tumbler and carries it to his mouth, which he was unable to do. His replies are prompt and immediate; he gives his hand quickly and carries it promptly to mine, and without the usual slow movements and unsuccessful attempts; rubs his hands together. I have not seen him use so much muscular action before. He yawns a great deal; says he feels tired. He vomited once to-day; but has retained a piece of chicken. His bowels are obstinately costive; he has had no stool for a week almost.

April 1st. His wife finds that he complains greatly of pain in his neck whenever she raises his head; pressure causes pain at third, fourth and fifth cervical vertebræ.

6th. He has taken the strychnine at very irregular intervals, often refusing it altogether; has now taken about half a grain. There has been some apparent increase of strength; he has not required the same effort (with distortion of his face) to squeeze my hand; still he cannot regulate his movements. On attempting to put a pill into his own mouth, he could neither carry his hand directly to his mouth, nor, when he had reached it, could he open his mouth and his fingers at the same time; he either retained the pill, or let it fall while his mouth was still closed.

Emaciation has now become extreme; his belly is retracted to the spine, and presents a hollow beneath the ribs and below the diaphragm.

Vomiting has continued every day; sometimes but once, usually three or four times a-day. The sense of fatigue is nearly constant with him; yawning frequent. The only pain complained of is in his scalp—a feeling of soreness rather than of pain; he makes his wife rub it constantly with spts. camphor.

His mind has wandered a little. His wife has often reported that he “talks strangely” to her and “is very irritable.” His replies to me have been correct, but he requires time to collect his thoughts; sometimes says he is “trying to remember,” when I repeat my question. Sometimes he has started with surprise at seeing me, and appeared to forget me for the moment.

11th. Has continued in much the same state. Irritability increases. Soreness in the scalp is more constant. Pulse grows weaker. Power of grasp less and less. He has passed his urine under him, and also one or two stools. Skin over the sacrum is becoming hard and sore. Pain over the cervical vertebræ is greater; he cries out if I press strongly there.

13th. I found his heart acting with violent impulse, and great rapidity; its sounds normal; pulse unusually strong; a dull, heavy pain at heart was all he complained of.

23d. I found him with his head thrown back; his mouth fast closed; and his eyes staring wildly. He was alone, and may have just been suffering from one of his “fits,” no one knowing it. His intellect was more dull than I had

yet found; he would not speak, though he understood me, putting out his tongue and grasping my hand when told.

26th. His mind is clear again; he talks readily, and to the purpose; but soon begins to ramble, talking to persons who are not present; he appears to be very sensitive to every noise about him, on the street or in the house; his eyes not more than naturally sensitive to the light. His left side is now as completely paralyzed as the right. Sloughs have formed on the hip and sacrum. He passes his urine beneath, but from inattention or paralysis of the bladder, for I saw him pass it in full stream.

To-day I galvanized him. He has for several days refused the strychnine, and indeed all medicine. He never took the strychnine regularly.

May 6th. Galvanism has been applied several times with intervals of a day, according to his strength. At first there was some appearance of improvement, shown by more energy of will and more prompt and ready movements, and by retaining his food for longer times.

Mild delirium has continued nearly constant; he talking continually to persons who were not present, and of things long gone by or that had never happened; and he raved so much about the galvanism that his wife wished it discontinued, thinking it caused the delirium.

11th. Died. Has continued to grow weaker since 6th, vomiting almost constantly. Brandy and water has been his only drink. Food of every sort he has refused for several days. Some intelligence and some power of motion remained this morning. He recognized his wife, squeezing her hand, and raised his head when his daughter's name was called. About noon he died.

Post-mort. examination forty-four hours after death.—Body emaciated to the last degree.

Brain.—Dura mater healthy, natural, pale; not adherent to cranium; arachnoid presented a few isolated spots of a slightly milky hue on the upper surface. Pia mater presented a moderate venous congestion. Substance of brain dry, very bloodless, of normal consistence; ventricles free of fluid; the plexus choroides remarkably pale.

Cerebellum.—Numerous encysted abscesses containing pure green pus were imbedded in the substance of the cerebellum, on both sides at the superior surface; at the base they were more numerous on the left side; the right containing but two or three, and these smaller; their size from that of a large marble to a pea; their walls a line perhaps in thickness, and sufficiently firm to permit the turning them readily out of the substance of the cerebellum. One or two near the surface were seen protruding before they were opened by the knife. The central lobe was not involved, nor did it appear to have been affected by them, neither by their pressure nor by their previous disease. There was diffused redness (minute arterial injection) on the surface of the convolutions, in a limited space on the left side, near the larger abscesses. Elsewhere the cerebellum appeared healthy to the eye.

Medulla Oblongata.—The gray matter was very pale, and not readily distinguished from the medullary; as was the case also with that of the spinal marrow; its substance appeared softer than natural; was readily wiped away with the sponge, breaking down very easily; there was congestion of the vertebral veins, probably cadaveric, as the blood was readily pressed out of them. Also a yellowish gelatinous substance in the loose cellular tissue between the dura mater and the med. spinalis, and the vertebral canal, of more than normal amount.

The *Spinal Canal* contained a small quantity of yellow serum.

Remarks.—The symptoms in connection with the post-mortem appearances agree perfectly with the received physiology of the cerebellum. Dr. Carpenter considers it “probable that the lobes are specially connected with the regulation and co-ordination of movements, whilst the vermiform processes are the parts connected with the sexual function.” In this case, the seat of the abscesses was the lateral lobes of the cerebellum, and the most prominent symptom was the entire want of power to regulate his movements; as in the attempt to carry a pill to his own mouth. On another occasion, he attempted to give me his hand; he raised his arm and advanced it towards me, but the fingers remained extended perfectly straight and rigid, and would not grasp mine: after several attempts, he remarked, “They won’t come down,” and finally he endeavoured to seize and bend them himself with the other hand.

In addition to this, his movements were always slow and difficult; always slower than his will, and always required his attention to be fixed on each muscle (or set of muscles) before he could move at all. Both strychnine and galvanism (especially the former) appear to have recalled the power of combining his movements and to have increased the energy and the promptness of them. Their effects however were soon lost; the strychnine he neglected, the galvanism he quickly became accustomed to.

The central lobe was unaffected, and accordingly there was no evidence that the sexual instinct was either increased or diminished. Nor were his habits, of which he spoke freely to me, such as to make it probable that there was previous disturbance of that instinct subsequent to the injury at the back of his head: nor before this were they such as to have been a co-operating cause.

The vomiting and intense soreness of the scalp are probably due to pressure by these abscesses upon the medulla oblongata and upon the origin of nerves distributed upon the scalp.

To the vomiting and the protracted starvation in consequence of it are due the extreme emaciation and the delirium; the mild character of which, and its gradual increase, together with the normal condition of the brain, show that its cause was the want of nourishment. He seems really to have died of starvation, for there was nothing in the condition of his organs (so far as examined) to prevent his living till the abscesses were absorbed, could food have

been supplied to him and retained; he seldom suffered from hunger, if ever, indeed; and usually refused his food when brought him, although he might have just asked for it. A feeling of extreme fatigue was the most he complained of, caused, doubtless, by the condition of his nerve centres (spinal marrow), which suffered by the pressure of the abscesses, and in common with his general system by the want of nourishment and by the long disease of its functions.

ART. XV.—*On the Treatment of Permanent Pseudarthrosis by an Apparatus which permits the use of the Limb and obviates the necessity of Amputation.* By HENRY H. SMITH, M. D., Surgeon to the St. Joseph's Hospital, Philadelphia.

FEW operations in surgery are more strikingly characteristic of the defects of the science than those of amputation of a limb on account of the existence of false joint.

When nature, under peculiar circumstances, shows herself unable to consolidate a broken bone, we readily recognize the great indebtedness of surgery to her powerful aid; but when in consequence of this a surgeon proposes to amputate a limb that is perfect except in the flexibility of the bone at the seat of injury, we cannot but notice the imperfect character of his art.

Under the most hopeless circumstances of ununited fracture, it should therefore be borne in mind that the restoration of the integrity of the lever upon which the muscles act will enable them to perform their function, and thus save the patient from becoming a cripple for life.

A simple means of affording the necessary support to a bone under these circumstances will be found in this and a previous paper. These means are but a slight modification of those which have been long employed in the bending of bones, resulting from mollities, &c., but their application to cases of pseudarthrosis generally will also be found to prove most valuable.

In No. XXIX., New Series of this Journal (Jan. 1848), I reported a case of false joint in the leg, in which the patient, after vainly suffering the application of caustic to the ends of the bones and subsequently their resection, was enabled to walk without difficulty by means of the splint there described. Suggestions were also offered as to the utility of somewhat similar means in the case of false joints in the upper extremity. I, however, feared at that time that pseudarthrosis in the femur would prove an exception to the general utility of the means recommended. Such I am now happy to say has not been the case in the instance in which it has been tried, and it is now reported in

the hope that surgeons may be induced to try it before resorting to amputation in cases where possibly a useful limb may be gained.

Since the report of Jan. 1848, the patient, Mrs. K., has constantly worn the splint, and found it to answer better than several others, which were tried in the hope of improving on the original. The main part of her weight (about 160 lbs.) being sustained by the straps at the knee, and the fracture strengthened by pressure all round it, she is now (Dec. 1850), although labouring under a false joint in both bones of the leg to a degree which permits considerable flexion and extension directly in the middle of the tibia, able to walk without attracting the attention of ordinary observers.

The success attending the use of the splints in another instance of a similar injury has also been most gratifying. This patient, Mr. S., weighing near 200 lbs., received a fracture of the leg in December 1849, for which he was skilfully treated by a distinguished practitioner of this city. Union, however, did not occur, and after labouring under false joint for three months, was directed to Mr. Rohrer (the cutler who manufactured my first splint) for an apparatus.

Being furnished with one similar to that of Mrs. K., he was soon enabled to walk, and, under the judicious treatment of his physician, such a degree of inflammation was induced in the bone as resulted in its consolidation. Although he can now bear his weight upon the limb, he yet wears the splints to guard against accidents.

Impressed with the results of these cases, I embraced the opportunity presented to me last April of testing the applicability of similar means to the treatment of pseudarthrosis in the femur, modifying them only so far as the structure concerned rendered necessary.

The Hon. Judge G——, of Ohio, received an oblique fracture a little above the middle of his right femur, in the winter of 1848, which, though treated in the usual manner, never united. In April, 1850, he therefore determined to visit this city, and placed himself in the hands of Dr. Wm. E. Horner, of the University of Pennsylvania, with whom I saw him. He was then upwards of sixty-three years of age; in rather feeble health, with an oblique ununited fracture, which permitted free motion of the middle of the shaft of the femur in every direction, and was incapable of sustaining his weight, being unable to move without crutches.

After fully considering the peculiar circumstances of this case, it was decided not to recommend an operation, but rather to try what the splints might be able to do towards relieving him. Accordingly, on explaining to Mr. Rohrer my views of the case, and the probable modification of the apparatus that would be required in this patient, I had the satisfaction of finding that he could accomplish it. After some trifling alterations which experience demanded, the Judge found himself once more able to walk with great freedom, very much to his satisfaction, as he had been assured by several surgeons whom he consulted that amputation would be his only resort.

The splints are shown in the figures.

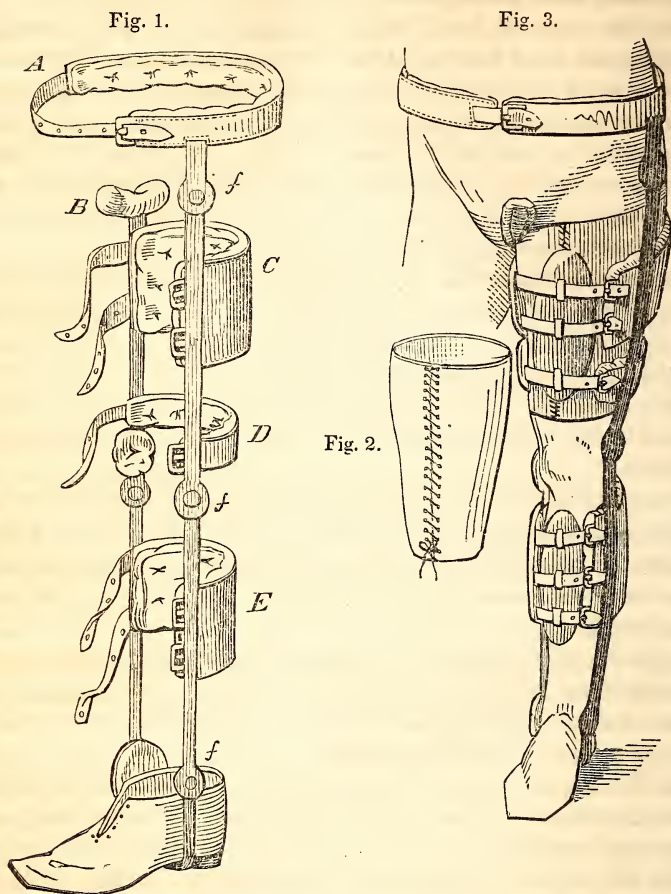


Fig. 1 exhibits a three-quarter view of the apparatus.

A.—A band and belt to go round the pelvis.

B.—A padded crutch-head to support the weight of the body upon the perineum, as in Boyer's splints for fracture of the femur. As he gained confidence, this piece was subsequently removed.

C.—A support to the back of the thigh. The splint which afforded the support to the front of the fracture is seen on the thigh in fig. 3; it was formed of sheet-iron, moulded to the limb and well padded.

D.—Another support just above the condyles. The front splint, fig. 3, came down in front as low as this piece.

E.—A support to the back of the leg, where the broad straps in front were buckled. This kept the leg directly in the line of the femur.

f f f were joints in the side steel splints, to favour the motion at the

ankle, knee, and hip joint. They were so arranged by a "half-stop" as to prevent sudden or excessive flexion.

Fig. 2 is a buckskin thigh piece, which laced up in front and extended from the groin to the knee, to protect the skin from chafing.

Fig. 3 shows a three-quarter view of the apparatus as applied with this. The Judge is now able to walk without his stick, though generally using it, from the force of habit; and in a recent message to Mr. Rohrer, in connection with some slight repairs, declared himself unwilling to part with it for the best farm in Ohio.

To the mechanical skill of Mr. Rohrer, he is certainly indebted for the lightness and strength of his semi-artificial limb.

ART. XVI.—*Hydrocephalus cured by Hydriodate of Potass.* By J. ST.

JULIEN GUERARD, M. D., of Beaufort, S. C.

IN the whole list of "*Opprobria Medicorum*," there is no disease that holds a more conspicuous place than hydrocephalus; none that has more completely put to naught the well-directed skill of the physician. I have therefore deemed it highly imperative, that whatever is calculated to throw light on this affection, or which tends to elucidate its pathology or treatment, should be made known to the profession.

As my aim is to be practical and useful, I shall not enter into the *polemics* of the subject, but will content myself simply with detailing the treatment and results of a case, which occurred lately in the practice of my father, Dr. J. D. Guerard, of this place. On the 8th of February last, Mr. J. S. Perry sent in from his plantation to the doctor a coloured infant for medical treatment. The mother stated that her child was six weeks old, and had suffered severely during the month from a cold, which resulted in an enlargement of the head. On examination, the head was found a third larger than natural, and the sutures were all widely patulous; the fissure commencing at the root of the nose, and extending up the medium line of the os frontis to the anterior fontanelle, being an inch across. The fontanelle itself was capacious enough for three fingers. The coronal and sagittal sutures were also widely extended. The scalp covering these broad fissures was puffed and elastic to the touch, and indicated the presence of much fluid beneath. Dilatation of the pupils and strabismus, together with subsultus tendium, and sudden screaming and tossing of the arms upwards, plainly denoting the nature of the little patient's affection. Also, the bowels were costive, and vomiting frequently occurred. This congeries of symptoms, so clearly evincing a case of hydrocephalus, determined my father at once to try the efficacy of the hydriodate of potass; cases

of the undoubted disease having been recorded as cured by this potent drug in your valuable Journal. He accordingly ordered an ointment consisting of 25 grs. hyd. of potass to the ounce of lard, to be well rubbed over the whole head, twice in twenty-four hours. This to be gradually increased up to 40 grs. to the ounce. At the same time, a solution to be made by dissolving 20 grs. of the hydriodate in ℥i of rain-water, and of this 10 drops to be given morning and evening. This treatment was continued up to the 3d March, and no melioration of the disease occurring, blisters were now ordered to be applied to the cranium; first on one entire half and then on the other, and so alternating that one side of the head or the other was always under the influence of the epispastic. A couple of grains of the blue mass was likewise ordered twice daily, which kept the bowels in a tolerably active state. Very shortly after, symptoms of anasarca supervening, the unguent was directed to be rubbed over the thorax and abdomen. And now appeared the crisis of the case, for a *vesicular eruption broke forth over the entire body*, the vesicles bursting and discharging pure lymph. From this critical discharge, the convalescence of the patient commenced, and the remedies being still continued, all the alarming symptoms gradually disappeared. About the middle of July, all remedial measures were discontinued, the case being considered as cured. The child was brought to town and examined two weeks since, and although there was still some obliquity of vision, I thought I had never seen a healthier and more sprightly looking infant. The sutures were almost all filled up with ossific matter, except the broad space between the two portions of the os frontis, and also the triangular space of the anterior fontanelle, but in both of these there is a hard, bony deposit on the dura mater below, and the cavity will soon be filled up, although not to a level with the superficies of the cranium. The forehead will always be marked with a deep sulcus in the middle. But the absence of all serous effusion from the head, or other parts of the system, and all symptoms denoting pressure on the brain, show that the hydrocephalic affection has been entirely removed, and the cure of the little patient made certain.

In conclusion, I would remark that the results of this case accord with those of other instances of hydrocephalus that have been treated by similar means, and that together they tend to show the complete curability of this dreadful malady even in its worst phases by the hydriodate of potass. Doubtless its peculiar virtue depends upon its excitant action on the absorbent system, assisted probably in this case by the alterative powers of the blue mass that was also given. As a salutary deobstruent, and powerful *discusser* of all hydropic and other morbid products, I regard iodine and its preparations as vastly superior to mercury, and as being one of the most potent weapons ever furnished by chemistry for the furtherance of our endless conflict with suffering, disease and death.

REVIEWS.

ART. XVII.—*The Transactions of the American Medical Association.* Instituted 1847. Vol. III. Philadelphia, 1850. 8vo. pp. 499.

THE present volume comprises the transactions of the Association at its third annual session, held in the city of Cincinnati, May 1850.

It is not our intention to enter into an examination of the influence which the acts of the Association since its organization have had, or which its future proceedings, based upon the general principles thus far recognized by its members, are calculated to produce upon the medical profession in the United States, excepting so far as this question is involved in the reports contained in the volume before us.

Convinced that the deliberations of an annual congress composed of delegates from all the branches of our profession, and from every section of the country, cannot fail to exert a favourable influence upon the character and condition of that profession, and having the more confidence in the beneficial working of the National Association in consequence of the firmness it has thus far exhibited in its efforts to elevate the standard of medical education in our midst, we have little fear of the judgment which the future shall render in regard to it.

The present volume of Transactions contains eleven reports from the standing and special committees appointed at the preceding session. But five of these reports are from committees charged with the duty of suggesting measures for carrying out the leading objects of the Association; the remaining six, though in themselves interesting and valuable, have at the best but a very indirect and remote relation to those objects, or to the means for their promotion.

The first report in order is that of the *Committee on Medical Sciences*. This is made up of a brief statement of "those facts illustrating the progress of Medical Science in the departments assigned to this committee, which have been gleaned from the medical journals and other publications of the preceding year, and from numerous correspondents. These departments are Anatomy, Physiology, General Pathology and Therapeutics, with other branches of Natural Science, bearing directly on the condition and progress of medical knowledge in America."

This report displays considerable industry on the part of the gentleman by whom it was drawn up. It presents a very fair and impartial exposition of the more recent contributions made by American physicians to medical knowledge. These, though they may not equal in number and importance the contributions made during the same period by the physicians of Europe, speak favourably, nevertheless, for the zeal with which the field of observation occupied by the former is attempted to be cultivated, and exhibits the useful and often interesting results which may be developed amid the absorbing duties of a profession, which, in this country, leaves to the practitioner but small time for a prolonged series of investigations, or for the record of these when they are made, in a form adapted for publication.

The exposition made by the committee is unaccompanied by any remark or comment. Their report being addressed to a body of physicians, they did not, we presume, consider it necessary to investigate the absolute or relative

value of the several facts and observations comprised in it, and yet it must be evident that such an investigation would have greatly increased the interest and value of the report.

The second report is that of the *Committee on Practical Medicine and Epidemics*. This is a very valuable document. Not only do its remarks on the several topics upon which it touches bear the impress of a sound practical judgment, but the positive information which it communicates, though limited to a very few of the topics embraced within the duties imposed upon the committee, is clear and definite, and sustained by the best statistical facts within its reach.

Upon the subject of practical medicine, the materials furnished by the report are extremely meagre; this results as well perhaps from the few improvements in the management of individual diseases that have been introduced during the past year by the physicians of this country, as from the committee having restricted their notice to the more useful novelties in medical practice derived exclusively from American sources.

Excepting so far as the subject of special therapeutics is embraced in the consideration of the leading epidemic of the past year, we find in the report nothing under this head of any particular interest.

The report is mainly occupied with a history of the epidemic cholera as it occurred in the United States during the year 1849. The most interesting portion of which history is that which relates to the facts connected with the introduction of the disease into New York and New Orleans, and its subsequent outbreak and spread in those cities.

That in the latter part of the year 1848, the cholera was introduced into New York by the crew of a vessel from Havre, there can be no reasonable doubt; of the fact of its introduction into New Orleans by the crew of a vessel from the same port there is not, however, the same conclusive evidence. Already had the premonitions of a visitation of the epidemic been experienced in the latter place, while the condition of the city in a hygienic point of view, and the state of the weather, were precisely such as would favor an outbreak of the disease. The rapid spread of the disease in New Orleans is likewise indicative rather of an epidemic cause than of propagation from one or two foci of infection.

That the cholera is not contagious in the proper acceptance of the term is proved very clearly in the present report by a close examination of the manner in which the disease commenced and spread in Philadelphia. An outline map of the city and districts is given, showing the date and place of the occurrence of the first twenty-three cases of cholera reported to the Board of Health.

"Letters," says the report, "from the twenty-one physicians to whose care these cases were entrusted, authenticate in the strongest manner the details of them. Two cases occurred on the 30th May at the upper verge of Philadelphia, in the Richmond district. On the same day, another presented itself in the district of Southwark, on the lower verge of Philadelphia, at the distance of three and a quarter miles. On the following day, a patient was seized within the city proper, a quarter of a mile from the third case. Three-quarters of a mile from this occurred another on the 1st of June, and a sixth on the same day near the Schuylkill, at least one and a half miles from any of the preceding ones. The seventh case was near the river Delaware, the eighth in Spring Garden, the ninth in the City near its southern border, and the tenth two miles and seven-eighths from the ninth, at the Point House, entirely below the limits of the City and Liberties. On the 11th of June occurred the eleventh case, in Richmond, near to the spot where happened the first two cases, twelve days before, and five miles and one-eighth from the tenth case.

"In seventeen days from and after the first case, three had happened in Rich-

mond, three in Kensington, two in Spring Garden, ten in the City, four in South-wark, and one in Moyamensing. Of these, with the exception of the first two, none were within a square of each other, although every district, but those of the Northern Liberties and Penn, had at least one case.

"A few of the gentlemen to whom notes were sent failed to answer them. Two had cases which had been in the immediate vicinity of other cases, but fifteen replied decidedly that there was no reason to believe that their patients had been exposed to any infected place, or to any case or cases of cholera. One case, the eleventh, which occurred on the twelfth day of the epidemic visitation, had recently visited the infected city of New York."

The general conclusion of the Committee is, that

"Cholera is portable but not contagious, that it is dependent for its accidental power rather upon density of population and personal uncleanness than upon any other causes. An atmosphere highly charged with emanations from living bodies seems to be the chief stimulant of the choleric influence. Next to this, the most powerful auxiliaries seem to be habits, passions, and food of a depressing character; whilst the influences of every kind which usually determine the blood to the intestinal surface give to the diseased agency its most dangerous direction."

That cholera and many other diseases not of a contagious character may be introduced into the midst of a community by the arrival of persons affected by them, or even of persons from places where those diseases are prevailing epidemically who are not actually labouring under them at the time of their arrival, is established by too strong a body of evidence to permit its being denied. In what manner such diseases become in this manner *portable* is perhaps inexplicable.

Notwithstanding it is true that cholera prevails usually to the greatest extent, and produces the greatest amount of mortality in those locations which are deficient in ventilation and cleanliness, and overcrowded with a debased, intemperate, illy lodged, and badly fed and clothed population, yet it is a curious fact that during the epidemic of 1849, in some of the worst localities in one of the southern districts, where everything appeared the most favourable to an outbreak of the disease, very few cases occurred. It was, nevertheless, in only those localities of the city and surrounding districts where the hygienic influences were unfavourable that the cholera occurred to any extent either in 1832 or 1849.

The following remarks in relation to the treatment of cholera have an important practical bearing:—

"So far as the committee have been able to collect the sentiments of physicians much conversant with the subject of the treatment of cholera, they believe that the internal sedatives and astringents, in moderate and frequent doses, prompt venesection, and external stimuli, including heat and cold, as the case may require, and salines, constitute the most successful practice in this formidable disorder. One of the most common errors consists in the want of patience, and in the restless change of the mode of remediation, so that a medicine is not permitted to make a permanent impression before a new article is substituted. It is chiefly for this reason that empirical remedies have so often acquired a reputation superior to that of a more rational practice which is not so steadily adhered to."

There is not much of novelty in the following remarks; still they are interesting as confirmatory of a fact which has been noticed in every place where the cholera has made its appearance.

"The cause of cholera is usually almost universally admitted to be a poison, the introduction of which into the body disturbs the nervous system in nearly all the people who live within its scope. In many, this disturbance is mani-

fested only by lassitude, or slight cramp, or slighter indigestions. In others, it expresses itself by anorexia, borborygmus, diarrhoea, or even dysentery. In a small part of the population it manifests its power by the production of watery passages, aqueous emesis, a rapid decline of the force of circulation and of the function of heat, and by violent and painful cramps of certain muscles.

"Are all those one and the same disease? Assuredly, if produced by a single specific cause! That the causes of cholera produce other and even fatal diseases, which are not usually esteemed as cholera, may be proved in various ways. Perhaps the strongest is the fact that in all places where cholera prevails, an attack of it is preceded by a diarrhoea of greater or less duration, except when, as at the New York quarantine station, it was brought from sea suddenly. Even in such cases, a diarrhoea immediately follows the first cases of cholera, and marks nearly all the subsequent ones.

"Another proof of this important truth is not only the coincident prevalence of bowel complaints which do not terminate in cholera, but their singular tendency to a fatal issue without presenting any acknowledged cholera symptoms.

"A reference to the statistics of such of the Philadelphia cholera hospitals as presented detailed reports, will show the prevalence of other bowel complaints. Thus, in the Cherry Street Hospital, while twenty-seven were affected by cholera, eleven had dysentery, and twenty-four diarrhoea, and that, too, in a hospital devoted to the use of cholera patients.

"In New York, in 1848, when no cholera existed there, 492 persons died of cholera infantum, 27 of cholera morbus, 227 of diarrhoea, 518 of dysentery, and 291 of inflammation of the stomach and bowels, making for the five warm months a grand total of 1,355. For the same period of 1849, when cholera prevailed, there died of cholera infantum 901, of cholera morbus 226, of diarrhoea 615, of dysentery 949, and of inflammation of the stomach and bowels 344, making a grand total of 3,035; although cholera asphyxia removed from the possibility of death from such causes 5,017 cases of persons who, from bad habits, exposure, and want, would have been very liable to such disorders.

"The valuable paper of Dr. McPheeters, on the late epidemic at St. Louis, speaks, in several places, of the general prevalence of abdominal affections, and of the irresistible tendency of death by affections apparently slight, and in ordinary times easily managed, and concludes a paragraph with the remark that 'this enormous mortality from other diseases is, in a great measure, to be attributed to the baneful influence of the epidemic.'"

To the Report of the Committee are appended two communications, the one from Dr. Pancoast, of Philadelphia, on the treatment of a particular form of aphonia by the inhalation of a stimulating vapour, the other by Dr. Joseph Reynolds, of Gloucester, giving a very able account of the typhoid fever and dysentery, as they have appeared in the epidemic form, during the last four seasons, on Cape Ann, Mass.

The form of aphonia alluded to in the paper of Dr. Pancoast is one of not unfrequent occurrence, subsequent to an ordinary attack of catarrh, and is unconnected with any perceptible organic lesion in the pulmonary apparatus.

"The voice is reduced to a faint, hoarse whisper, distinguishable only at the distance of a few feet, and a continued attempt to talk, though it gives no pain, becomes quickly attended with a feeling of fatigue, as though there was some obstruction to the passage of air through the larynx. In breathing, surely, there is little or no difficulty in these cases, as the individuals are capable of undergoing considerable exertion without very unusual signs of fatigue."

Dr. Pancoast supposes the aphonia in these cases to depend upon a paralyzed condition of the muscles of the larynx, whose business it is to dilate the rima glottidis during the act of articulation.

Dr. P. relates two cases of this form of aphonia, in which the voice was restored by the inhalation of chlorine. He presumes the chlorine to act merely as a local stimulant, and that to direct any other exciting vapors would effect similar results.

The inhaling apparatus employed by Dr. P. was the ordinary tubulated glass retort, with a glass funnel having some filtering papers at the bottom. In the bowl of the retort was placed a solution of the chloride of soda or lime, and in the glass funnel a portion of muriatic acid largely diluted with water. As the dilute acid falls drop by drop into the bowl of the retort, chlorine will be gradually liberated, and may be breathed from the end of the instrument. In Dr. P.'s cases the inhalation was continued for some minutes, and repeated two or three times a-day, according to the degree of irritation it produced in the throat and larynx.

The report which follows is that on *Medical Education*. This report must be viewed as exposing the sentiments, not of the committee to whom the consideration of the subject of medical education was submitted, but those of the chairman alone. It does not appear that the report was seen by either of the other members of the committee previously to its presentation, and so far as we can judge from the proceedings of the association, the views embodied in it are not those in which the members of that body could concur.

All the views presented in that portion of the report which relates to the preliminary education of the medical student are unquestionably correct. The schools are not *alone* to blame that students are admitted by them, and, after the required attendance upon the prescribed courses of professional instruction, are graduated as doctors in medicine, whose preliminary education, and physical, and moral, and intellectual qualifications are not adapted to render them competent to the faithful and successful practice of the healing art, or to become useful and distinguished members of the medical profession. Physicians should not receive into their offices as students illiterate and incompetent persons. Parents, as well as those desirous of entering upon the study of medicine, to use the appropriate language of the report of Dr. Roby,

“Should be told, frankly and plainly, by those who have the best right and opportunity to do it, that nothing can compensate for lack of physical, intellectual, and moral fitness for his vocation; that his position in a profession for which he has none of the essential pre-requisites must ever be a false one, and that he has no just claim to its honours and immunities, without faithful, continued, industrious application.”

If by the private medical preceptor the admission to the study of medicine of any incompetent persons were discouraged, the medical schools could then more properly interpose and effectually aid this movement on the part of the profession, by refusing to matriculate such as could not produce sufficient evidence of a proper preliminary preparation for the successful acquisition and practice of the healing art. The effort to elevate to the proper grade the character of the preliminary preparation requisite for the student of medicine must be made, not by the schools alone, but by the profession in conjunction with the schools. Without the constant and effectual aid of those who are engaged in fitting students for attendance upon the courses of instruction embraced in the lectures and demonstrations of the medical schools, it will be in vain for these latter to attempt by any regulation of their own to effect this important object.

From the remaining portion of the report, we should infer that Dr. Roby has as far misunderstood the real object of the previous recommendations of the association in regard to the increase of the lecture term and the augmentation of the branches taught in our medical schools, as he has overrated the competency of these, with their present courses of instruction, to impart to their graduates the desirable amount of instruction to fit them properly for the important and responsible duties of their profession.

Far be it from us to disparage our medical schools; we know full well the

talents and industry of very many of those who fill with honour to themselves and advantage to the student their professorial chairs; but the question is not whether the limited number of branches embraced in our medical courses of instruction are well taught, but whether, on the one hand, these branches are sufficient to constitute an adequate medical education; and, on the other, whether the time now occupied by the student in the acquisition of medical knowledge is sufficient fully to indoctrinate him in those principles and precepts upon a perfect familiarity with which his future usefulness as a physician so entirely depends.

The question is not whether the recommendations of the Association having for their object the elevation of the standard of medical education in this country have or have not as yet been adopted in good faith by the different schools; but are these recommendations adapted to effect their object? It has been contended, we are aware, that in two courses of lectures of four months each, in which several important branches are but slightly noticed, or entirely omitted, all the knowledge that can be imparted by this method of instruction may be acquired by the student; that everything beyond this is not only unnecessary but injurious. Very few, we apprehend, will be willing to adopt this opinion; many, however, of those who admit that a prolonged and extended course of study would be desirable, could students generally be induced to pursue it, are still opposed to the recommendations of the Association. With Dr. Roby, they base their opposition to those recommendations upon the plea "that in this country admission to all the liberal professions must always remain comparatively easy." That all our institutions "must conciliate the public good will, upon which they are dependent for existence and patronage, by a *liberal* exercise of their powers and privileges;" which, in other words, means by placing the requirements for admission into the liberal profession so low that the door may be laid open to all, with as little expenditure as possible of time, money, and industry, and with proportionably as small an amount of qualification. That it is not practicable or desirable to adopt in American schools that "exact training, rigid requirements, and restraining discipline, considered essential to the highest grade of intellectual education," which is claimed for some of the European schools.

Now it is very doubtful whether they who offer these pleas in opposition to the introduction of a more extended and thorough course of professional education into our medical schools, and to the adoption of a more severe test of the qualification of candidates for the doctorate, are themselves satisfied with them. It is certainly unfair to assert that an adequate number of students would not be found to matriculate in those schools, that should adopt and carry out the measures recommended by the American Medical Association, until the experiment shall be fully tested. It has been said, we are aware, that the rapid increase in the population of our country, and the wide space over which that population is spread, cause so great a demand for physicians, that they must be supplied to meet that demand with a celerity which precludes prolonged attendance upon courses of instruction and a thorough training in the principles and practice of the profession before commencing upon its active duties; or otherwise, many of the new and remote settlements will be left destitute of proper medical assistance, and be obliged to resort in case of sickness to the aid of incompetent persons or the regular empiric. The extent of the supposed demand for physicians in any portion of our country is greatly exaggerated. The emigrant disposition of our people is such as to cause the deficiency of physicians, in any community, however remote, to be very quickly supplied from their superabundance in other places. And even were

this not the case, we deny that the necessity of supplying the demand by such as are only imperfectly qualified can be received as a valid objection to elevating the standard of medical education in the United States, or to demanding higher qualifications in those who would be received as *regular members* of our profession.

It is the duty of that profession to insist that its reputation, its usefulness, and the interests of its members shall receive no detriment from the admission into its ranks of the incompetent and the unworthy. Let then the line of distinction between the properly educated and qualified, and the ignorant and incompetent physician, be distinctly drawn, and honestly maintained; and no fear need be entertained that any respectable medical school will long refuse to co-operate in the effort to elevate the character, dignity, and usefulness of the American physician, by affording him ample opportunities for the acquisition of a complete medical education, and by demanding of its graduates sufficient evidence of their having properly profited by those opportunities.

The report next in order is that of the *Committee on Medical Literature*. This report is the best written, and one of the ablest of those contained in the volume before us. It presents an interesting and judicious estimate of the general characteristics of the medical periodical literature of our country, and short notices of the leading original works by American authors, published during the preceding twelve months. These are followed by a consideration of the subject of a national medical literature; the difficulties which stand in the way of its formation; and the means which the committee deem best adapted for its promotion. Fully convinced of the general accuracy of the opinions set forth with so much force and perspicuity by the author of this report, and concurring in the correctness of most of the means recommended in it for the promotion of a medical literature of our own, many of which have indeed been advocated by us,* we must, nevertheless, be permitted to suggest a doubt as to the judiciousness and efficacy of one or two of the plans proposed. It does not appear to us that for the Association to proclaim, by a formal vote, any American medical work, reported by one of its committees, as being the most valuable that has appeared during the year, would be calculated to promote the object aimed at. In the first place, it would not be possible to select from among a number of works on different branches of medical science that which could with propriety be pronounced "*the most valuable*"—inasmuch as no correct comparison of them could be made. Again, independently of this objection, the most valuable work published during the year would at best be but an equivocal recommendation, unless a number of other works of acknowledged excellence had been published during the same period. But the most striking objection is the difficulty of the task thus assigned to the Association being performed, without exciting in those authors whose works shall not be noticed, as well as in their friends, a feeling of enmity towards the Association, calculated to impair the harmony and usefulness of its proceedings.

Nor are we convinced that offering a pecuniary reward for the best memoir or essay on any given subject is a means well adapted to promote medical literature, or to procure contributions of distinguished excellence. The comparatively trifling premiums that the Association will be able to offer, and the fact that the memoirs or essays presented for such premiums, must be subjected to the judgment of a committee to pass upon their comparative value, will prevent many of those best qualified to succeed from entering into

* See report F. p. 203.

the competition. The experience of the past does not, we believe, speak much in favour of medical prize essays. Very few can be indicated that have added to our knowledge, or that have established a reputation for their authors, or enhanced the reputation already possessed by them.

In the report of a Special Committee on the measures suggested in the Report on Medical Literature for 1849, which follows, some of the leading means adapted to the promotion of a national medical literature are discussed. The conclusions at which the committee arrive, "after a careful examination of the subject," are summed up in the following resolution:—

"*Resolved*, That the only legitimate means within our reach for the encouragement and maintenance of a National Medical Literature, are, to increase the standard of preliminary and professional education required of those who would enter the medical profession; to promote the circulation among the members of the profession of the medical journals of the day; to encourage the establishment of district medical libraries, and to induce every practitioner to cultivate with care the fields of observation and research that are within his reach."

The form of the Memorial presented to Congress, in favour of an international copyright law, presented by the National Medical Association, as reported by a special committee appointed at the preceding session of the Association, succeeds the report just referred to.

On the subject of an international copyright law, which we hold to be one of no trifling importance, we shall take the liberty to present here a quotation from the report of the Committee on Medical Literature. In this quotation, Dr. Stillé has presented the subject in so just a light, that we feel desirous his remarks should be read by such as are still opposed to the contemplated law, that they may understand the equitable principles upon which its passage is advocated.

"Different countries began to legislate for authors and inventors at different periods. In England, the first enactment in their favour is not older than a century and a half. This limited the copyright to a very short term of years, which, after strenuous efforts, has recently been extended. But neither in England, Continental Europe, nor America, does the law recognize an author's rights in his works to be absolute and unalienable, and in no two countries is the same degree of right conceded. Everywhere the subject is as much a matter of statutory regulation, as if the natural right of the author had no existence whatever.

"An American author has, consequently, no available and legal control over his own literary productions beyond what the statute grants him. When the period of its protection expires, his intellectual family may be torn from his arms by the first domestic trader who chooses to risk their sale, and at all times the foreigner may make merchandize of his literary progeny. The legal rights of any author, then, are of local origin, and power beyond his own country he possesses none at all, and he cannot with a show of justice complain that the foreign bookseller reprints his works. To do so would be to act the part of the dog in the fable, who was fain to prevent another from enjoying what he could not possibly use.

"It is the fashion now-a-days to brand as piracy the republication of foreign works, and much vulgar abuse has been bandied between France and Belgium, and between England and the United States, which, we think, the view of the subject now presented would have changed into courteous remonstrance. The legal right to republish cannot be questioned, and its existence should protect all who exercise it from reproach. The equitable right to do so is a wholly different question, one which may and ought to be fully discussed in a spirit of temperance and conciliation. If it be true, as we believe, that no such right exists, it is high time that the law and the equity of the subject should be made to harmonize by the establishment of an international copyright.

"The benefits of such a law would be incalculable, springing from the one glorious consequence, that through it the thinking, and therefore the governing minds of two great nations, common in their origin and language, would be brought directly into contact and fused together, strengthening one another by communion, rivalry, and example, and would with this redoubled strength reach and maintain with ease the vantage-ground of civilization against all the world besides. Commerce may knit together nations, but only in their material interests binding them with the bonds of selfishness; but a free intellectual commerce is the noblest of all bonds, for it knits the souls of men.

"A law such as would secure the rights which we assume to be absolute and inherent, is perhaps the surest expedient that could be devised for promoting our native literature. Not only would it enable publishers to offer a fair remuneration to our authors, but it would also have the effect of causing a number of foreign works to appear first in this country; and since the sphere of influence presented by the millions of American readers is so far superior to any other, many a foreigner of genius and even of established reputation would speedily be numbered amongst our adopted citizens. Grafted thus with the strongest offshoots of the parent tree, American literature would rapidly attain a degree of luxuriance and fruitfulness, which is quite impossible under the present system of its culture, or rather neglect. But the benefits would be reciprocal; our writers would become English writers, and find an attentive and appreciating audience among a people who even now receive them gladly, and award to those who deserve it no scanty meed of praise.

"Until within a short time, the copyright law of England, more liberal than our own, was construed to permit foreigners to enjoy privileges which are denied to British subjects in the United States. But by a recent decision in the Court of Exchequer, 'a foreign author residing abroad, or his assigns, is not an author within the meaning, and could not have the benefit of these acts which are intended for the encouragement of British talent and industry.' In consequence of this decision, American works, which had been liberally paid for by certain English publishers, were immediately re-printed by others and sold at a reduced price; so that American books are now as completely at the mercy of the foreign trade as English books are at the mercy of our own. Considering how far from equitable the practice of American publishers has been, we dare not, with any show of reason, contend against the late unfavourable construction of the Statute of Queen Anne, and must be content to witness the exclusion of our authors from a field where they were gaining emolument as well as honour, and destroying the prejudices entertained against us as an illiterate people, careless of success in any but commercial pursuits.

"Nothing short of an international copyright law can place this matter upon an honourable footing; and so prevalent has the conviction of this truth become, that perhaps not a single man of letters, and scarcely a publisher of books, can now be found to oppose it. Not many years ago, there was an equally general feeling adverse to the measure, at least among publishers, although there never was a time when our authors did not plead for justice to their foreign brethren and themselves. So marked, yet gradual a revolution in opinion can be traced to no other cause than the power of truth. Yet it is not complete, nor will it be until Congress moulds it into the form of law, and, in conjunction with the British government, breaks down this wall of separation between two nations which else, 'like kindred drops, had mingled into one.'"

The report on *Public Hygiene*, which follows, is mainly occupied with an inquiry into the sources of typhus fever and the means suited to their extinction. The inquiry is divided into two parts, the first relating to the origin of typhus from the excretions of persons in health, and the second to its origin from the excretions of persons in disease.

The subject is a highly interesting one, and it is treated by the committee in an able and satisfactory manner. The extent of the various excretions given off by the living body in a state of health—their baneful effects upon the health of those who are exposed to their influence, and the fact that they

may become the sources of a febrile miasm, when from a neglect of domestic and personal cleanliness—defect of ventilation, or the overcrowding of houses or neighbourhoods or communities, these excretions are allowed to accumulate. The committee, it is true, have developed no new facts in relation to this subject; they have, however, presented one class at least of the facts bearing upon it, in a more prominent point of view than has been heretofore done—we allude to those which relate to the extent and nature of the effete matter expelled from the system in a given time.

The following remarks upon the communicability of typhus fever express, we are convinced, the correct exposition of this most important question.

“Many distinguished pathologists regard typhus as springing exclusively from a specific *contagion*. That the disorder is communicable, under certain circumstances, there is no question. The communication, however, is effected by the transmission of a principle which, in its nature, and mode of origin, has no analogy with the poisons of small-pox, measles, and scarlet fever. The poisons of these diseases are the products of specific morbid secretions, or vital processes which are respectively *sui generis*, whilst the poison of typhus consists of the ordinary excreted matters chemically altered in their properties. As then, the excrementitious emanations from a typhus patient may be transmitted to a person in health, and in him produce typhus, the disease, of course, may be said to be communicable. But as the poisonous material communicated is totally unlike a specific contagious virus, the disease in question cannot with propriety be considered *contagious*. The disorder is strictly the effect of a chemical æriform poison, and as this originates from human excretions, the poison is correctly denominated *idio-miasma*.

“The excretions of patients affected with any form of disease may produce typhus fever; only, however, when they are accumulated and long pent up in confined apartments, or when they are highly vitiated or putrescent, at the moment of their elimination from the body, which is generally their condition in the more malignant forms of typhus. But even when in this form they are rarely the cause of fever—if the persons, clothing, and bedding of patients be preserved clean, and pure air be freely admitted to their apartments.

“From inquiries instituted to determine from which of the special excretions of persons in disease *idio-miasma* mostly originates, it has been found that the cutaneous and pulmonary transpirations generally furnish the elements of the poison. It is true, these excretions are variable in quantity, especially in febrile disorders, being sometimes greatly diminished, and at other times excessive. At no time, however, are they entirely suppressed. Febrile heat, though usually attended with a decrease of exhalation, promotes evaporation, and hence in part the dryness of the skin. When not apparent to the eye or touch, the cutaneous emanations are often manifest to the sense of smell. Edwards, in his work on the ‘Influence of Physical Agents on Life,’ expresses the opinion that the perspiration can never be entirely suppressed, and Dr. Southwood Smith, in speaking of the odour which belongs to a typhus fever patient, remarks that ‘it is so characteristic, that a person familiar with the disease might in many cases be able to pronounce, merely from the odour of the effluvia that arises from the body, whether the disease were fever.’

“With respect to the urine and fæces of the sick, they are discharged occasionally, and are commonly removed from the apartment immediately or shortly after they are voided, and hence they are, in general, comparatively innocuous. It is only, or, for the most part, when these evacuations occur involuntarily, or are allowed to remain in the room of the sick, that they are sources of a fever poison. It is then to the excrementitious matter thrown off from the lungs and skin of diseased persons that the poison of typhus is mostly traceable. Such matters, transformed into a febrile principle, and diffused in the air, constitute what Dr. Miller denominates *atmosfera idio-miasmatica*. Every patient affected with typhus in its gravest form, in a close apartment, is surrounded by such an atmosphere, and it is by the attendants and others coming within the circle of its influence that the disease is propagated. When many typhus

patients are assembled together in a close and narrow space, the miasmatic atmospheres of the sick gradually widen their circles of activity, until, meeting and blending together, the whole place becomes pestiferous. The liability of nurses and physicians of contracting fever in an infirmary is generally proportionate to the number of typhus cases admitted into the wards. Dr. Christison says that it has been invariably remarked, that the admission of a few cases into a general ward is attended with little or no risk of the fever passing to the other inmates of their wards. But so soon as the cases exceed considerably a third of the whole, then the fever begins to show itself among the domestic attendants, and to appear among the other patients. Similar observations have been made in the New York Hospital. It has been remarked by an English writer, in reference to the admission of fever patients into general hospitals, that 'it has been found safer and better to have them scattered as single cases through different wards, instead of congregating them together into one;' and adds, that this plan has been adopted in more than one of the London hospitals; and we believe that there has been, on the whole, no cause to regret having followed it."

The difference which is thus pointed out between the contagiousness and communicability of diseases is unquestionably well founded, and has an important practical bearing. Numerous well-authenticated facts have induced us to believe that persons coming from places in which the air has become infectious, whether from local causes or a general epidemic influence, may carry with them an atmosphere capable of producing disease in a remote locality, or when an epidemic is impending of hastening its outbreak, even when they exhibited no indications of being themselves affected with the disease. This of course can only happen when the individuals alluded to are entirely neglectful of personal cleanliness, and during their passage from the infected localities are placed under circumstances where a free ventilation is precluded, as is too generally the case with poor emigrants in crowded vessels. The tenacity with which the peculiar atmosphere in which a person passes a large portion of the day adheres to his person, and which often can be got rid of only after the most thorough ablution and an entire change of clothing, must have struck every one who has paid any attention to the subject.

In passing from the etiological to the hygienic view of this subject, the committee indicate, in brief outline, the measures to be pursued to prevent the production of the idio-miasma giving rise to typhus fever. The question involves the entire subject of public and private hygiene. In the summary given by the committee, correct general principles are laid down—to point out the plan for carrying these principles out would require a series of reports, each far more voluminous than the one before us.

To the present report are appended two well drawn up and most instructive expositions, the first of the Sanitary Condition of Massachusetts and New England, by Dr. Edward Jarvis, and the second of the Hygienic Characteristics of New Orleans, by Dr. J. C. Simonds.

The general conclusion of Dr. Jarvis is full of truth, and shows the importance of renewed efforts being made to induce the legislature of every State in the Union to provide by law for a proper registration of the births, marriages, and deaths, which annually occur within its limits. The important results of such a registration are too little understood and appreciated by a portion at least of our own profession.

The conclusion of Dr. Jarvis is as follows:—

"A sanitary survey of this and of every other State would, I fear, demonstrate an inequality in the distribution of life in various places, and among various classes of people, such as few, either of the philanthropists or political economists, now suspect. And, when these facts shall be demonstrated, the

way will be open to the discovery of many of the causes of disease and death, some of which certainly, many of which probably, can be removed, and the health of man thereby be increased, and his life prolonged."

There is one result developed by Dr. Jarvis, in his examination and comparison of the registration of deaths in the city and country, in the States of Massachusetts and New York, which would not certainly be anticipated; it is that

"The diseases connected with respiration are much more prevalent in the country than in the city of both States; being in Massachusetts an excess of thirty-two per cent., and in New York twenty-eight per cent. of the pulmonary diseases that are not of the endemic or epidemic class. *The difference in favour of the cities in respect to consumption is still greater.* The deaths from this disease were thirty-eight per cent. more in the rural districts of both States than in Boston and New York."

"Compared with the number of deaths, consumption," remarks Dr. J. in another place, "destroys more in the country than in the cities of England. But the whole number of deaths from this cause, in proportion to the living, is greater in the cities than in the country. It may be so in America, but we have no facts to determine the question for this or any of these States."

We shall indulge in one more quotation from the highly interesting paper of Dr. Jarvis. It relates to the average duration of life in the different classes of society.

"The sanitary inquiries made in England and France have discovered very great inequalities of life and health among people of different classes, and in different conditions. Thus, according to several tables in the 'Report on the Sanitary Condition of the Labouring Classes of England and Wales,' prepared by Edwin Chadwick, Esq., of London, in the families of the

Prosperous classes	1088	died at an average age of	42.6	years
Middling classes	4791	"	29	"
Poor classes	19,849	"	20.4	"

"In the families of the more comfortably situated, only twenty per cent. died under the age of five years; while among the poor, fifty per cent. of those who died had not passed that age.

"Among the prosperous, 46 in every 100, and among the poor only 8 in 100, lived to their 61st year.

"I have had an opportunity to make some limited inquiries in this State relative to the life and mortality of the various classes of people; and these have led me here to the same results as Mr. Chadwick reached in England: that, wherever there is a diversity of outward circumstances, there is a diversity of vital force, a difference of health and of longevity; that external poverty is but a sign of inward poverty, of a weak body and feeble mental and moral power; and that, generally, what the world calls poverty, the want of estate, or destitution, is not a thing of accident, or of external circumstance, but it grows out of the man, and is a necessary consequence of the quantity of vital force that belongs to him—to his body and to his mind.

"I analyzed the bills of mortality of this town, Dorchester, and divided all the persons who had died into four classes: 1st. Farmers who owned their farms. These are generally the most discreet, quiet, comfortable, and prosperous people. 2d. Labourers, including all who work at day labour or on wages, without capital. 3d. Master mechanics. 4th. Merchants, capitalists, professional men. These classes included all who had died in the course of twenty-seven years, which was as far back as I could trace their condition with any certainty. There were 1767 deaths in this time. The average longevity of all was 32 years, 6 months, and 18 days."

The average longevity of the 1st class was 45 years, 8 months, and 6 days; of the 2d, 27 years, 5 months, and 14 days; of the 3d, 29 years, 6 months, and 21 days; and of the 4th, 33 years, 2 months, and 27 days.

Dr. J. states that a similar result was obtained from an analysis of the bill of mortality of the town of Brooklyn, during a period of 46 years. The average longevity of the 1st class being 39 years, 0 months, 12 days; of the 2d, 27 years, 7 months, 8 days; of the third, 24 years, 2 months, 17 days; and of the fourth, 29 years, 3 months, 3 days.

The same kind of result, he adds, was obtained from an analysis of the mortality register of the town of Concord during a period of 63 years.

We are presented next with the report of the *Committee on Adulterations and Sophistications of Drugs, Medicines, Chemicals*, etc. This committee have well performed the duties enjoined upon them, and have presented a report which embodies much interesting information, and a series of judicious suggestions.

The securing to the community entire purity as well as a genuineness in the various remedial agents demanded for the treatment of disease, is a subject of no trifling importance, inasmuch as upon it depends the chances of safety for the sick, as well as much of the certainty of clinical medicine.

The provisions of the act of Congress directing an inspection of all drugs and chemicals imported from abroad, provided proper care is taken to appoint competent agents to carry these provisions into full effect, are probably sufficient to protect us, as far as can be expected, from the introduction of sophisticated and adulterated medicines from foreign markets, but it becomes next a question, "whether cupidity, aided by science, and the characteristic ingenuity of our countrymen, will not soon supply, if not exceed, the abuses from former sources."

This important inquiry has elicited much attention on the part of the committee, and their conclusions in respect to it are upon the whole satisfactory. That domestic sophistication of drugs does exist to a certain extent is an unquestionable fact; but "it is satisfactory to learn," quoting the words of the report before us, "that thus far there does not appear to be any *increase*, but probably a *diminution*, in the domestic sophistication of drugs. Certainly, if we leave out those whose chief business consists in the scandalous fabrication and sale of *nostrums*, adulterated medicines are not commonly vended in our large cities, excepting under the particular circumstances presently to be mentioned."

These circumstances are the practice pursued by druggists of respectable character, without intention of fraud, of making and vending some of the most important officinal articles of different grades, and of providing low-priced articles for those whose only aim is to buy them cheap.

These inferior and adulterated drugs, we are informed, are chiefly disposed of in the southern and western portions of the United States, to the physicians and people residing in the small towns and villages, and sparsely populated districts. In the large cities, particularly in the Atlantic States, bad drugs are, as a very general rule, dispensed only by inferior apothecaries.

Among the plans which have been suggested to prevent, as far as possible, the sophistication of drugs and the sale of those which are spurious or of inferior quality at home, the committee believe that the following may be considered as the most important.

1st. The passage of laws by the different State legislatures providing for the appointment of inspectors, and making it a penal offence to deal in adulterated drugs or medicines.

"It is difficult," the committee remark, "to understand why fraud in the manufacture and sale of medicines, which have so important an influence on the health and lives of the people, should not be punished with the same se-

verity as debasing and counterfeiting money, which merely affects their pecuniary interests. The past history of state legislation, in relation to the practice of medicine, affords little hope, however, that any salutary laws on this subject can be procured in many or all of the States of the Union; and, without a general concurrence of action, no good will be accomplished. It is to the members of our own profession, therefore, in conjunction with the respectable druggists and apothecaries, that we must look for whatever reformation is to be accomplished.

"2dly. It has been suggested that physicians should feel it to be their duty to inspect the medicines in the drug stores from which they are in the habit of obtaining supplies for themselves or their patients. This would exercise a wholesome influence, if submitted to by the apothecary, and frequently performed by the physician; neither of which, however, is very probable. A more effectual plan, because of its being more likely to be carried out, would be for the various State medical societies annually to appoint a board of examiners, who should procure samples of different articles from the drug stores within their limits, analyze and otherwise examine them, and publish the results. If this were impartially and skillfully done, it would excite the ambition of the meritorious, and control the less scrupulous."

"3dly. The co-operation of the druggists and apothecaries, in discountenancing and putting down the traffic in inferior and adulterated medicines, should be solicited. For this purpose they should be encouraged to institute pharmaceutical associations in every considerable town throughout the country, which, more than anything else, would tend to elevate the professional and moral standing of their craft. Men who are in the habit of meeting together for laudable purposes are far less liable to plunge into bad practices than the isolated being whose better feelings are not warmed by association. The establishment of such societies has always been salutary. In Philadelphia, the institution of the College of Pharmacy, with its cabinet, its lectures, and excellent quarterly journal, which is published regularly, has raised the character of the apothecaries to an enviable height; and in the city of New York, where a like organization has been more recently formed, similar effects are observable.

"4thly. In making their purchases of medicines, physicians should be willing to pay fair prices, and be careful to procure them only from the most respectable druggists. Men of this character, selling in large quantities, never demand exorbitant profits, and it is not to be expected that they will sell good articles at a loss.

"A large amount of the inferior qualities of drugs passes through the hands of country shopkeepers, who deal in dry goods, groceries, hardware, &c.; with people who are such indifferent judges, articles are selected that afford the largest profits, and the quality is pretty certain not to exceed the price.

"A class, worse even than this, of whom to purchase medicines, are druggists whose advertisements are chiefly filled with nostrums and secret preparations. They who deal with men of this description, besides exposing themselves to the risk, amounting almost to certainty, of being cheated, may be regarded as active supporters of the worst kinds of quackery."

The Report of the *Committee on Indigenous Medical Botany* is made up of a paper of Dr. Ives, giving his experience on the virtues of certain plants, and another by Dr. Barratt, on the indigenous plants of Abbeyville District, S. C.

The plants embraced in the paper of Dr. Ives, are the *Isnardia palustris*, the *Senecio aureus*, the *Neottia pubescens*, the several varieties of the *Cypripedium*, the *Cornus circinata* and *florida*, and the *Epigea repens*, upon the remedial properties of each of which some interesting remarks are made, based mainly upon an experience of more than forty years.

The paper of Dr. Barratt is simply a catalogue on the indigenous plants of the District of Abbeyville—with a bare mention of their medicinal properties or supposed curative powers, excepting in the case of the *Cotyledon umbil-*

catus, the *Gossypium herbaceum*, the *Anda gomnesii* and *Helonias dioica*. Of the virtues of the first of these we have some account from Parkinson, who wrote in 1640, and from Elizabeth Bakewell, whose *Herbal* was published in 1737, and a reference to some cases of epilepsy detailed in the *British and Foreign Med. and Chirurg.-Review* for January, 1850, in which this plant was used with apparently good effects. Of the efficacy of the seeds of the Cotton plant in intermittent fever, we have the testimony of Dr. W. R. Davies, of South Carolina—which is such as to direct a more extensive investigation of its remedial powers in that disease. The *Helonias dioica* is recommended by Dr. Bramer as a remedy of unquestionable powers in leucorrhœa.

The Report of the *Committee on Surgery*, with its appendices, is one of the longest which occurs in the present volume. The subject of Anæsthesia is first considered. In the body of the report, the chief question which is discussed is as to which of the anæsthetic agents is to be preferred. The testimony of some of the most distinguished surgeons in our country is adduced in favour of each of those now in use, some giving a preference to pure sulphuric ether, others to chloric ether, others to chloroform, and others again to a mixture of chloroform with sulphuric ether. The conclusion to which the committee comes is thus expressed:—

“Were we to employ any other anæsthetic than the simple chloroform, we should select the mixture of it with ether, one measure to two, as practiced by Professor Atlee. From several trials we have made, we think the pulse is rather better sustained than under the chloroform alone.”

In addition to what is said in favour of inducing anæsthesia in all important surgical operations, in the body of the Report, we have appended to it a paper by Dr. J. C. Warren, in defence of the practice, and in recommendation of chloric ether as the most advantageous agent. Another paper by Dr. W. T. Atlee, in pointing out the safety and advantages of anæsthesia, and another by Dr. S. D. Gross, on the use of chloroform as the best anæsthetic agent.

It is not our intention to notice in detail the several subjects embraced in this report. The particular surgical diseases and accidents in reference to which any important observations or improvements have been made by American practitioners within a short period are clearly stated, and occasionally enforced or illustrated by the experience of the gentleman, Dr. Mussey, by whom the present able report was drawn up.

Among the appendices to the report is a valuable communication by Dr. J. C. Warren, on the result of operations for the cure of cancer. Eight cases are detailed—four scirrhomatous and four cephalomatous—in all of which the operation appears to have effected a complete eradication of the disease.

“Three of the scirrhomatous cases,” remarks Dr. Warren, “occurred after the middle period of life, the fourth at that period. In all four cases, the patients enjoyed a good state of health. One of them, the first, was quite remarkable throughout her life, subsequent to the operation, for her strength of mind and full possession of her bodily faculties, till near the period of her death. Of the four cephalomatous cases, none exceeded thirty at the time of the operation. All are perfectly well, and with appearances which indicate that they may never experience a return of the encephaloid disease.”

Dr. Warren is evidently of the opinion that cancer in a large number of cases is strictly a local disease, and that the diseased part may be extirpated, and the whole mischief be in this manner got rid of. And he hints that a correct history of all the cases of cancer for which operations have been performed with their results would support this conclusion. We confess that our own opinion has been the reverse of that of Dr. Warren. It may be that

the change of organization and nutrition is occasionally strictly local—and we hope that future investigations may prove it to be so; so far, however, the facts at present in our possession would seem to lead to the opposite conclusion.

In an appendix to the present volume of Transactions is contained some observations by Dr. N. S. Davis, of Illinois, undertaken to ascertain how far the cerebellum has any special connection with the sexual propensity or function of generation. He compared the measurement in a variety of directions, as well as the weights of the cerebellum in the brains of a number of bulls and oxen, all of the same age, and, as nearly as possible, of the same general size and variety of stock. The average of the several measurements and weights, and the extremes, are presented. Dr. Davis then remarks—

“It will be seen that these examinations not only confirm those of M. Lassaigne, so far as the relative and absolute weight of the cerebellum of the castrated animal is compared with that of the same age not castrated, but the measurements equally refute the *moderate phrenological view* mentioned by Carpenter, which, as we have already said, makes the central part and vermiform processes the organ of sexual appetite, and the lateral lobes the co-ordinates of motion. On the contrary, so far as our measurements indicate any difference, it consists in the greater relative development of the central part and vermiform processes in the ox than in the bull. And if the cerebellum of the ox is deficient in any part, it is in the size of the *lateral lobes*. But on the most careful examination of half a dozen cerebelli of bulls and oxen, lying side by side, I could detect no constant or uniform variation either in their absolute size or the relative development of their several parts. Now, unless we deny the validity of the physiological law, so much insisted on, especially by phrenologists, that exercise increases growth, and *vice versâ*, it must be conceded that the facts here adduced in reference to the cerebelli of oxen and bulls, added to those presented by M. Lassaigne in reference to the gelding and stallion, effectually disprove the existence of any *special* connection between the cerebellum, either as a whole or in any of its parts, and the sexual appetite or function of generation.”

A description is next given by Dr. John Evans, of Illinois, of an obstetrical extractor, adapted, in his opinion, to supersede the forceps—being free from many, and the most serious, of the objections to which the latter is liable.

The principle upon which it operates is that of placing a band around the head of the child above its largest diameter, and fixing the ends near together, by articulated steel fingers, so that it cannot be drawn off. From this band straps pass down to the vertex, and out through the os externum, to be grasped by the hand, and upon which the extractive force is exerted. The band is applied after the manner of passing the ligature around a polypus by Gooch's double canula.

The form and mode of application of the instrument cannot be well understood without the drawings which accompany the description.

We can see no difficulty in the application of Dr. Evans' extractor—but doubt whether it will be found superior to a well-constructed forceps. One objection which strikes us is that the material of which the instrument is principally constructed—silk bands and braids—must necessarily become imbued with the discharges from the vagina and uterus upon each application of it, without the possibility of its being effectually cleansed previously to its being again used. Consequently, either a new instrument must be provided for each case, or we shall run the risk of subjecting our patients to the influence of morbid matters retained by the instrument.

The volume concludes with a “Brief Notice of some of the Physicians of the United States who have died within a few years;” collected and arranged by Dr. Stephen W. Williams, of Massachusetts.

These notices, though not drawn up with all the care and neatness that were

desirable, are nevertheless interesting. To Dr. Williams we return our thanks for thus presenting a brief memorial of those members of our profession who have recently departed from our midst, and we trust that the same thing may be repeated by him or some other member of the Association at each of its sessions, so that a necrology, at least, may be preserved of the deceased members of our profession. The knowledge that a record of his name and professional character will be made and thus handed down to those who shall live long after he has ceased to be, will not unfrequently act as an additional incentive to the physician to exert every energy of his mind and heart to render that record one of honour and distinction.

We have thus sketched out a partial notice of the more important contents of the volume before us. Our purpose has been rather to direct attention to the matters embraced in the reports and other papers of which the volume is composed than to give a full analysis of them. Those of our readers who feel an interest in the doings of the Association, and in the influence which that body is destined to exert upon the character of the medical profession in this country, will of course procure for themselves a copy of the Transactions.

The general character of the reports comprised in the present volume is equal, if not superior, to that of the reports contained in the two preceding; they do great credit to the talents and industry of the gentlemen by whom they were prepared. They are more strictly confined to a history of the progress of American medicine, and to subjects bearing immediately upon the interests of the medical profession in this country; they exhibit also the evidences of perfect candour and an honest desire to reform, as far as possible, any evils under which the profession may labour, and to elevate it to its appropriate rank of a learned and liberal profession.

It has been said that the American Medical Association will ever fail in carrying out the objects for which it was organized, from its inability to enforce compliance with its requirements, or to carry into full effect any one of the reforms it may suggest. It is true that the Association has no legal means to enforce its decisions, but it has the slower, it is true, but perhaps more certain, influence of moral power. It can, by wise counsel, and unity of action, so mould public opinion as effectually to subserve the objects it was intended to accomplish. It is impossible that the deliberations and recommendations of a congress, composed of a large body of the most experienced and talented physicians, assembling annually from every portion of the Union, and bearing with them the respect and confidence of their professional brethren and of the communities in which they reside, can fail to carry with them sufficient influence to insure the adoption, finally, of every reasonable reform in medical education and ethics, and thus to ensure the elevation of the character of the American physician.

D. F. C.

ART. XVIII.—*A Dissertation upon Dislocations and Fractures of the Clavicle and Shoulder-Joint, being the Jacksonian Prize Essay for 1846.* By THOMAS CALLAWAY, F. R. C. S. Demonstrator of Anatomy to Guy's Hospital, &c. &c. &c. 8vo. pp. 178 : London, 1849.

It is impossible to devote too much study to the injuries of the upper extremity; and, therefore, although in all the systematic treatises on practical surgery fractures and dislocations occupy prominent places, and although there are many voluminous works extant devoted to these subjects exclusively, we

always peruse with pleasure every new volume in which a competent observer discourses on these topics.

The book before us has attracted very kind attention at home and abroad. A glance at the table of contents shows that the author has adopted the proper course in conducting his studies. He first describes very carefully and truthfully the *anatomy* of the parts concerned in the injuries which he is about to explain, and then points out the alterations of structure and function impressed upon them by accidental causes.

We pass over Mr. Callaway's observations concerning the *bones*—the clavicle, scapula and os humeri—and pause for a moment at the section in which he describes the *scapulo-humeral articulation*. The bones which enter into this articulation are the head of the humerus and the glenoid cavity of the scapula. "The ligaments of the true cavity are, the glenoid; the capsular, with its synovial membrane; the coraco-humeral, or accessory; and the *long head of the biceps*, or intra-articular." It will be perceived by the above quotation that the author ascribes to the long tendon of the *biceps muscle* an office additional to that which it possesses in virtue of its connection with the fibres of the muscle. His remarks on this point are so interesting that we will quote them somewhat in full; he acknowledges his indebtedness to Mr Hilton, of Guy's Hospital, for the physiological views expressed with reference to the function of the tendon; they are similar to those published by Mr. Soden in the *Med.-Chir. Transactions* for 1841. "The *glenoid ligament* is a band of fibrous structure, oval in its form, which runs around the rim of the cavity, and, by elevating its margin, serves to deepen it; it is formed by the *splitting of the long head of the biceps*, which, bifurcating at its upper border, passes round and again becomes united at the inferior margin of the cavity." "The long head of the biceps is of so great importance to the integrity of the shoulder joint, in *directing the head of the humerus*, that it has been very properly considered as an inter-articular ligament by some anatomists; by surgeons, however, its importance has been rather overlooked or undervalued. It arises from the upper part of the glenoid cavity (being most intimately connected, or rather identical, with the glenoid ligament itself), passes over the head of the humerus and under the capsular ligament; being perfectly independent of either, it is entirely invested by a synovial sheath of its own, and holds much the same relation to the cavity of the shoulder that the ligamentum teres does to that of the hip. Having arrived at the margin of the anatomical neck of the bone, it passes between the two tuberosities and down the bicipital sulcus to the belly of the muscle, whose great natural contractile power, being further stimulated by the constant action of the forearm, tends to keep the tendon tense; otherwise it would be constantly liable to be thrown into a fold, or, becoming lax, to impede the motions of the joint. It will thus be seen that the tendon, in some measure, tends to render the capsule of the joint incomplete; it, however, forms about one-third of a circle, which, together with the concavity of the glenoid fossa, makes about two-thirds of a circle, and compensates in no slight degree for the shallowness of the cavity. Let us suppose that the deltoid be put in motion; the head of the humerus *ought* to be brought *directly upwards*, and would, without doubt, impinge against the under surface of the acromion arch. This, however, does not take place; the polished hemisphere of the humerus is carried against the under surface of the tendon, which, acting as a curved director, guides the rounded head of the bone inwards and backwards against the glenoid cavity." This fact is well illustrated by two diagrams, in one of which the tendon is exhibited *in situ*, and in the other it is divided.

The capsular ligament (a bag so long and lax that when the supra and infra-

spinatus, the teres minor, and subscapularis muscles, which are intimately connected with it, and which tend, more or less, to support the head of the humerus, are cut away, the latter falls down from the scapula an inch or more), is strengthened in its turn by fibres sent from the tendons of some of the muscles about the joint. Thus this important articulation, admitting of such almost unlimited motion, and exposed to so many sources of accident, is wisely and sufficiently protected.

The description in the text of the muscles situated about the bones and joints is very satisfactory and well worthy of an attentive perusal. But we cannot dwell upon it. We pass to the *Fractures of the Clavicle*.

Mr. Callaway does not treat at all of the process by which a fracture of the bone is repaired. With reference to fracture of the clavicle, he merely remarks that this is accomplished for this bone sooner than for any other, and fixes the time at which a laborer may return to his work at the *end of the fourth week*. We think, from the experience which we have had in this matter, that the addition of a week to this allotment would be a much safer limit.

The clavicle, from its slender proportions, delicate structure, and exposed situation, is very often fractured; and though the rupture of the bony fibres may take place at any point, it occurs more frequently, perhaps, at the point at which the two arches of the bone unite—at about its middle. Nevertheless, for convenience in describing the evidences of this lesion, the author considers the injury as occurring either within or without the point of attachment of the *coraco-clavicular ligament*. And this division is a very good one, because the symptoms of the two fractures are very dissimilar, and because, too, the phenomena attending the accident at points within the one named present merely shades of modifications.

The signs of the *intra-coracoid* fracture are well detailed—they are generally unmistakable. But some little variety of explanation exists with reference to the *causes* of the deformity. The outer fragment is drawn downwards by the weight of the arm, and perhaps by the action of the deltoid, and forwards and inwards by the contraction of the pectoral and subclavius muscles, so that it is overlapped by the outer end of the internal fragment. The latter is supposed by some to remain stationary; by others, and by Mr. Callaway also, it is said to be tilted *upwards* by the action of the sterno-cleido-mastoid muscle. But it seems to us that this muscle cannot exert any such power upon it, partly because of the unfavourable direction of its fibres, but chiefly because the sterno-clavicular and costo-clavicular ligaments would be opposed to any such effect; and their passive influence would be aided, in all probability, by the action of the subclavius, and also of the pectoralis major.

In some rare instances, it happens that the outer fragment presents its inner extremity above and in front of the sternal portion. Again, it not unfrequently occurs, as we have had more than one opportunity of observing, that a fracture may involve the middle of the bone, and there shall be no displacement. This latter variety is usually met with, as the author mentions, in young people. Besides the cases to which he alludes, we will mention one which came under our own inspection. A stout healthy boy about seven years old was brought to us, said to have fallen upon his shoulder and broken his collar-bone. He complained of inability to move his arm, and suffered pain, particularly about the middle of the clavicle, when the arm was moved for him; there was tenderness and soreness at the same point; no swelling, no evidence of contusion, and we could not detect the slightest crepitus upon careful and varied manipulation. We placed the arm in a sling, and dismissed the boy, assuring his mother that it was “only a bruise.” A few days afterwards, while in

the act of throwing a stone, a separation of the fragments occurred at the middle of the bone, and all doubts as to the reality of the fracture vanished. In such cases, the fragments are maintained in apposition, as the author observes, by the integrity of the periosteum covering the bone.

The *extra-coracoid* variety of the injury is attended with much less deformity, as a general rule. Mr. Callaway says of it: "From its very simplicity and want of obvious symptoms, it is oftentimes overlooked, its characteristic being a negative one, viz., the *absence of displacement*. In this accident the motions of the arm are impaired, but to no considerable degree; measurement of the two shows no difference. I have, however, observed a somewhat drooping inclination in the affected shoulder." The reality of the injury can, however, as he remarks, be almost always, if not invariably, recognized by a thorough examination—crepitus being usually detected. He is careful to indicate how this sign may be best elicited.

In examining into the causes of the non-displacement after this fracture, Mr. Callaway ascribes this exemption to the integrity of the coraco-clavicular and coraco-acromial ligaments, which, holding both fragments in their grasp, prevent any dislocation; he considers the breadth of the fractured surfaces as of very secondary consequence, and that too small a portion of the deltoid muscle is brought to bear upon the inner fragment to serve any effect of importance.

We do not think that Mr. Callaway has sufficiently called attention to the distinction to be drawn between fractures occurring *exterior* to the *trapezoid ligament* and those which involve the bone *between this and the conoid*. And yet this distinction is important, because in the former there is considerable displacement, while in the latter there is scarcely any. This fact has been established and explained by Dr. R. W. Smith, of Dublin. Mr. Callaway, indeed, refers to the investigations of Dr. Smith, and pays him a well-merited compliment; he also quotes the following passage from a paper published by this gentleman in the *Dublin Journal* for 1841, suggested by the examination of a series of fractures of the clavicle, occurring between the conoid and trapezoid ligaments: "In all the fracture had united; in some without deformity, but in the greater number the deformity resulting from the injury remained, and in each specimen presented nearly similar characters—the fragments being united nearly at a right angle, which was salient upwards and backwards, the infra-clavicular space was considerably diminished by the displacement consequent upon the fracture; in every one of the specimens a remarkable process of bone, varying from a quarter to three-quarters of an inch, had sprung from the under surface of the clavicle at the seat of fracture. This portion of bone is generally to be found when fracture has traversed the bone between the conoid and trapezoid ligaments. In none of the specimens was there any overlapping of the fragments." We have not been able to see the volume of the *Journal* from which this extract is made; but the opinions expressed therein are very different from those which we find in Dr. Smith's recent and most valuable "Treatise on Fractures in the vicinity of the Joints," &c.; and as Mr. Callaway has seen this book, he should have referred to it for the author's more mature views on this subject. In this volume, we find that Dr. Smith's opinions are based upon the examination of *eight* specimens of fracture of the outer end of the clavicle, in *five* of which the bone was broken between the trapezoid ligament and the acromion process of the scapula; in the remaining *three* between the conoid and trapezoid ligaments. He says: "From the examination of these preparations, we learn that the outer extremity of the clavicle may be broken either between the coraco-clavicular liga-

ments, or between the trapezoid ligament and the acromion; and that fracture in the *former situation* is of comparatively rare occurrence, and attended with *scarcely any displacement* of either fragment of the bone; but that in the latter, contrary to what is usually stated, there is generally a *considerable amount of displacement*. When the bone is broken between the coraco-clavicular ligaments, it is manifest that, if these structures have not been injured, there can be but little displacement of the fragments, according to the thickness of the bone, although there may be a slight derangement as regards its direction"—p. 215. Again, at p. 217, he says, "When the clavicle is broken between the conoid and trapezoid ligaments, there is, in general, so little external deformity, that it is sometimes difficult to detect the true nature of the injury." "But the case is very different when the bone is broken external to the trapezoid ligament. Here the coraco-clavicular ligaments can have no direct influence upon the outer fragment, which is displaced partly by muscular action, and partly in consequence of an alteration in the position of the shoulder." "When this displacement is carried to the utmost, the two fragments, as in several of the specimens which have been described, form a right angle with each other, the outer being placed in front of the inner, and a small portion only of the articulating surface of the former remaining in contact with that of the acromion"—pp. 215-16. "When an examination is made, the outer fragment will, in the majority of cases, be found to be slightly depressed below the level of the inner, and the anterior part of the affected shoulder is approximated, to the amount of from one-fourth to three-fourths of an inch, toward the sternum. In one case, the *inner* fragment, as well as the outer, was depressed, thus increasing the usual deformity to a great degree"—p. 218.

It would seem, therefore, from these quotations, that Mr. Callaway has confounded the remarks of Dr. Smith, ascribing to him views concerning the fracture between the coraco-clavicular ligaments which we find him entertaining, for the most part, with reference to that which has occurred between the acromion process of the scapula and the trapezoid ligament.

Dr. S. attributes the displacement in the latter fracture to the influence of the action of the trapezius muscle on the one side, and of the weight of the shoulder and the action of the deltoid and pectoral muscles on the other; while at the same time the scapula is made to perform a partial revolution on its axis, drawing with it the outer extremity of the clavicle forwards; this revolution being effected by the contraction of the rhomboid muscles, which approximates the inferior angle of the scapula to the spine, while the superior angle falls away from the spine in obedience to the weight of the arm.

The commonly received opinion, that there is no displacement after fracture of the clavicle exterior to the coraco-clavicular ligament, must therefore be admitted with some modification.

Mr. Callaway justly observes that *compound fracture* of the clavicle is very rare, unless the complication be caused by *direct violence*. But he contends that this does not produce "a true compound fracture, which, to my apprehension," he says, "consists properly of wounds communicating with *and caused by* the fractured bone. The practical bearing of the distinction is this—the violence which produces the fracture and consequent wound breaks up the cellular tissue investing the neighbouring muscles and soft parts, into which the air, becoming admitted, induces those enormous and formidable suppurating cavities in the limb which we find so frequently after compound fractures. In short, it seems that the distinction between a simple or a compound fracture is, that the former heals by the adhesive and the latter by the suppurative process of inflammation"—p. 62. Now, by this very feature, a fracture which is accompanied

by laceration of the integuments, so situated and of such extent as that the air has free access to the broken bone at the point of fracture, is a *compound fracture*, whether the wound in the soft parts has been produced by the protrusion of the fragment, or by a direct external blow. For in both cases the reparation is rendered slow by the same untoward conditions, and in both its progress is attended by the formation of similar "enormous and suppurating cavities."

With respect to the best means of retaining in proper apposition the fragments of a broken clavicle, and of preserving the normal form of the bone, we think that Mr. Callaway is not so well informed as he should be. Admitting the correctness of the *principle* laid down by Desault, and it is undoubtedly correct, Mr. Callaway recommends Desault's *method of treatment*, or a modification of it, which differs from the original only in omitting the first roller, and the sling for the support of the forearm and hand; and in this latter particular it certainly is not an *improvement* upon the original. "The objection to this bandage is," he says, "that, owing to the pressure it makes upon the mammæ and thorax, it is not well adapted to females; it requires some little skill in bandaging, and is very apt to become deranged. Still, it has a neat look; if it excoriates, the part can be cut; its application does not terrify the patient, and, above all, pressure can be better regulated by a roller than by any other apparatus"—p. 65. We submit that the objections, as above announced, *far outweigh* the assumed merits of this dressing. But, in addition to those disadvantages, we urge that it does not fulfil all the indications of treatment, inasmuch as it does not force the shoulder *backwards* as completely as is generally necessary; that it is entirely unsuited to compound fractures, and that, in order to examine the position of the fragments and the condition of the integuments at any time after this bandage has been applied, it is requisite to remove at least one roller, and that one which is supposed to fulfil a very important part of the treatment. And with regard to its chief merit, as Mr. Callaway considers it, viz., that "pressure can be better regulated by a roller than by any other apparatus," we ask what prudent intelligent surgeon would attempt to maintain the fragments of a clavicle in apposition by *direct pressure exercised upon them*? Instead of this cumbersome, uncomfortable, and comparatively inefficient apparatus of Desault, we would advise the employment of Dr. Fox's; it fulfils all the indications, produces no unpleasant compression of the mammæ or thorax, is neat and cleanly, leaves the seat of injury always uncovered and open to the inspection of the surgeon, or for the employment of any topical application, is equally well adapted to the treatment of compound as of simple fractures, and admits of re-adjustment without removing any part of it; we do not believe that its application in England will "terrify the patient." A description of this apparatus may be found in the American reprint of any English system of Surgery, and in the treatises on minor surgery published in this country. If Mr. Callaway will adopt this method of treatment, we think he will no longer have occasion to "doubt if any fracture (excepting perhaps that of the extremity of the radius) turns out so unsatisfactory," or to lament that "fractures of the clavicle do not usually turn out triumphs of our art"—p. 63. But even with this very perfect apparatus in use, we feel bound to advise him to depart somewhat from his "rule, to *pay attention to the bandage at the end of a week*"—p. 66. St. Luke himself, with all his inspiration, would have failed had he been so chary of his attentions to his patients! Mr. Callaway *must examine carefully the dressing at least once daily*, in order to be sure of the continued apposition of the fragments, and to relieve any undue pressure upon any one point. He will thus, we doubt not, be more successful

in his treatment of this interesting and important fracture than he seems to have been hitherto.

We pass to the chapter on *Dislocations of the Clavicle*. Of these, Mr. Callaway adopts the most common enumeration, viz., dislocation of the sternal end *upwards*, *forwards*, and *backwards*; and of the acromial end, *upwards*, and *downwards* under the acromion process of the scapula. In any case, the accident may be a *simple* or a compound, a complete or an incomplete luxation.

The dislocation *forwards* he considers as the most frequent of those occurring at the sternal extremity of the clavicle. His statement of the *signs* and *symptoms* of this accident is sufficiently correct and definite, although there is no detail, and nothing of the full and minute history which we expect to find in a work devoted to the consideration of a very limited number of accidents. He states as *the causes* of this variety of luxation a fall upon the apex of the shoulder, or upon the elbow when the arm is abducted from the side, and any great force applied to the anterior part of the shoulder. He has omitted one which is, perhaps, as frequent as any—a sudden and forcible drawing of the shoulder or shoulders backwards, as in the case mentioned by Boyer, of a baker's boy, who, while resting his basket, which was secured to him by straps passing around and in front of his shoulders and under the axillæ, on the parapet of a bridge, started forwards, in order to save his basket, which he felt to be falling over, and thus dislocated one clavicle forwards.

Mr. Callaway gives no cases of this accident, nor any recital of the post-mortem appearances. Indeed, neither in this chapter, nor in the preceding, does he allude to the latter important point, although he might have discovered some instances, we should suppose, in which death followed within a short time after both fractures and dislocations of the clavicle, and in which the lesions met with in both had been described. At any rate, an essay on fractures and dislocations is manifestly incomplete, which does not include a description of the appearances of the fragments of the bone, and the condition of the soft parts surrounding them, in the former class of accidents, and of the nature and extent of the injury done to the ligaments of the interested joint, together with other modifications of structure consequent upon the change in the normal situation of the bone, in the latter.

The dislocation of the sternal end *backwards* is much less frequent than the one just mentioned: nevertheless, several cases of the injury are recorded to which Mr. Callaway refers. The evidences and the causes of the displacement are sufficiently enumerated. The sternal end of the bone may be thrown *downwards* or *upwards*, as well as backwards. Mr. Callaway thinks that when this displacement is *upwards*, it is so always *secondarily*, the primary direction having been downwards behind the sternum. He attributes this change of position to the effect of the weight of the arm and the contraction of the sterno-cleido-mastoid muscle. But, we would ask, why may not this position upwards have been the *primary* situation assumed by the bone? For, unless the force which produced the dislocation have impressed upon the extremity of the clavicle a decided *direction downwards*, certainly the contraction of the sterno-mastoid and the weight of the shoulder would induce an upward motion at the moment of luxation. It must always be a matter of conjecture, on the part of the surgeon, whether a particular displacement be secondary or not, unless a different location has been actually *seen*. And in this particular instance, we think it much more probable that, when the sternal end of the clavicle is found resting behind and above the top of the sternum, it was made to assume this position, directly upon leaving its articular seat, by the tonic contraction of the sterno-mastoid, than that it was drawn from below by this

muscle; for, one of the evidences of the dislocation *downwards* and backwards is the *fixity* of the bone in this position, so that its restoration is often a matter of great difficulty.

Mr. Callaway explains very well the method of reducing this dislocation. He quotes an instance of this accident; but he omits, unfortunately, two of the most interesting and important elements in a clinical report, viz., the narration of the evidences which led to the *diagnosis* of the case, and the mode of reducing the injury. In the event of the luxation proving irreducible, and accompanied by very great difficulty or inability of swallowing, he recommends "to cut down upon the bone, pass a broad curved spatula behind it, and with Scultetus' chain or Solly's saw remove the offending portion of bone."

The dislocation *upwards* of the sternal extremity of the clavicle, Mr. Callaway considers as a *secondary* luxation—"a sequence and a consequence" of the dislocation *forwards*. In support of this opinion, he refers to the strength of the inter-clavicular and rhomboid ligaments, and he says, "I scarcely think it possible to depress the humeral end of the bone, by any violence, to such an extent as shall make the sternal end start upwards out of its place; because the entire shoulder, humerus, and scapula would have to be depressed to produce the accident, inasmuch as the accident could not be caused by the depression of the clavicle alone, as the descent of this bone would be limited by its coming in contact with the coracoid process, and its further descent prevented." And he cites an example of such a descent of the clavicle, in the instance of a milkman, who, in the pursuit of his trade, had been accustomed to carry his pails on his shoulders. In this case it was found, after death, that "both the clavicles articulated by their under surfaces with the coracoid processes of their respective scapulæ, on both sides; the sternal end of the clavicle was in proper relation with the sternum, the coraco-clavicular ligament was much shortened and thickened, and there was no appearance of a dislocation upwards." This certainly is a very interesting pathological specimen; but the change from the normal position of these clavicles was *gradually* produced by the *continued pressure* exercised upon them, and not caused by sudden violence. This instance, therefore, can scarcely be admitted as evidence against the possibility of a dislocation upwards of the sternal end of the clavicle as the result of *sudden violence* impinging upon its acromial extremity. However, be this possible or not, there is very little doubt, we think, that such a luxation may be occasioned by direct force inflicted from below and in front upon the *sternal* extremity of the bone. The action and the effect of such a cause Mr. Callaway has not noticed. We cannot, therefore, agree with him in thinking that "it is necessary for the *anterior* dislocation to take place, before the end of the clavicle shall make its appearance above the level of the sternum"—p. 77. We consider that this opinion is too *exclusive*; such a secondary change of position may take place, we doubt not, and perhaps this may be the most common mechanism of the dislocation upwards; in which case, the agents in producing this change would be, as mentioned by Mr. Callaway, the weight of the shoulder and the contraction of the sterno-cleido-mastoid muscle.

Mr. Callaway admits two varieties of dislocation of the *acromial* end of the clavicle, viz., *upwards* and *downwards*.

The displacement *upwards* upon the top of the acromion he considers, and we should think correctly, the most common variety of dislocation of the clavicle. The diagnosis of this injury is sufficiently easy, in most cases. Its causes are, according to Mr. Callaway, the obliquity of the articulating surfaces comprising this joint, and a fall or a blow upon the shoulder; the former

is a predisposing cause, the latter are efficient. The signs of this accident are very well narrated in the text. An example in point is given from the wards of Guy's Hospital; but in this instance, also, we have to regret the absence of information as to the *appearances* by which "it was immediately pronounced by the dresser to be a dislocation backwards of the acromial end of the clavicle near the scapula." To restore the bone to its proper position, "the patient was seated upon a low stool, his shoulders were forced backwards, the surgeon's knee being placed between the scapula; pressure was at the same time made upon the posterior edge of the bone." This method failed; it was again tried, with the aid of a warm bath; it was again unsuccessful, as was every other plan. At last, says Mr. Callaway, p. 79, Mr. C. A. Key "had recourse to a very ingenious plan: he took a piece of wood, well padded with lint, and having applied it to the distal end of the bone, and struck it several times with a mallet, a fair trial was given to this, and the bone, although evidently not so prominent, and somewhat moved, was still unreduced," and it remained unreduced. What end Mr. Key could have rationally hoped to accomplish by such a proceeding we cannot imagine, unless it may have been to fracture the clavicle near its middle, or to dislocate its sternal extremity, for such was most likely to have been the result of the operation of this "very ingenious plan."

Another example of this accident is given; it occurred a few weeks only after the former, and was also treated in Guy's Hospital. The dislocation was occasioned by a fall upon the tip of the shoulder, while the patient was wrestling. Again, the narration of the appearances is meagre in the extreme. "Examination by Mr. Foster, the dresser, showed a well-marked injury. The anterior edge of the trapezius was observed to be tense and well defined." In this case the reduction was accomplished; the surgeon placed his left arm in the axilla, and taking the elbow of the affected side in his right hand, pushed it upwards, backwards and outwards; the bone immediately returned to its place.

The displacement of the distal end of the clavicle *downwards, under the acromion process* of the scapula, is an excessively rare injury. Mr. Callaway says that there is only *one* case recorded, that by M. Tournel, in the *Archives de Médecine* for Dec. 1837. There is also another example on record, and equally incontestable; it is reported by Mell (Vidal de Cassis, t. ii. 587; South's Chelius, Am. ed. vol. ii. 220). In the first case, a private chasseur fell with his horse; the horse on rising trod upon the anterior part of the man's shoulder. "The clavicle remained attached to the sternum; but the superior and inferior acromio-clavicular, the coraco-clavicular ligaments being torn through, its external extremity quitted the two articulatory facettes, and glided under the acromion. The injured part presented two projections; a *superior* one, formed by the acromion; the other, *inferior*, by the external extremity of the clavicle; the apex of the same shoulder appeared approximated to the trunk; moreover, there was no projection to be felt above the acromion process, thus doing away with the idea of its being a dislocation of the acromion process"—p. 83. Mr. Callaway does not direct how the restoration of the extremity of the bone is to be effected, but the proper method will, doubtless, occur to the reader.

There is a third form of luxation of this extremity of the clavicle, which Mr. Callaway does not mention; indeed, we have not seen it noticed by any English or American surgeon. It is the luxation *under the coracoid process*. Vidal de Cassis (t. ii. 590-4) cites *six cases* of this accident; we believe that in no instance was an autopsy made, but as the signs of this dislocation were somewhat different from those attending the other varieties, and as there seems

to us to be nothing in the anatomy of the parts to render such a displacement impossible, we are disposed to admit its existence. The evidences of its occurrence in the instances recorded were, according to Vidal, diminished prominence of the shoulder, which is at the same time thrown forwards; the arm hanging by the side, without being lengthened, and susceptible of being easily moved, without increase of pain, in every direction, excepting inwards and upwards; ecchymosis of the acromio-coracoid region, and sinking of the clavicle, particularly of its external portion, of which the extremity may be felt, it is said, in the axilla. The distance of the acromion from the sternum is not mentioned in these cases, but, according to Vidal and Morel, it is *increased*, and thus constitutes a diagnostic sign of this peculiar displacement, because in all the other injuries involving the clavicle, the distance between these two points either remains the same or is diminished.

The mechanism of this dislocation may be thus explained: A violent fall upon the anterior and outer face of the shoulder, or a severe blow acting upon this point from below, throws the scapula upwards and backwards, so that the coracoid process is forced to a higher level than the outer extremity of the clavicle, its external ligaments being ruptured, while its horizontal line of direction is preserved by its connection with the sternum and first rib, and with the subclavius and pectoralis major muscles; so soon as the action of the dislocating cause has ceased, the scapula will be thrown forwards, partly by the weight of the arm, and partly by the action of the muscles which draw upon the shoulder from the anterior part of the chest.

In the after-treatment of the several dislocations of the clavicle, Mr. Callaway advises the employment of his modification of Desault's apparatus for the treatment of fractures of this bone. We would substitute that of Dr. Fox, because we think that it will preserve the parts in much more perfect apposition; its action should be assisted by a compress and roller, or by the application of the truss, as recommended by Melur, if the sternal end be displaced. (Vid. *Archives de Médecine*, t. xix. p. 531.)

We come now to the consideration of *fractures of the scapula*—comparatively unfrequent because of the protection which this bone derives from its surrounding and enveloping muscles. Mr. Lonsdale reports only eighteen cases of this accident out of 1901 fractures which were treated in the Middlesex Hospital, during six years. Mr. Callaway classes them after the usual manner: those of the body of the scapula as supra and infra-spinal fractures; those of its angles as of the anterior angle or neck of the bone, and of the inferior angle; and lastly of the processes.

We are pleased with the contents of this chapter. Besides the author's concise and judicious observations on the manner of occurrence, and the indications of these accidents, he reports some exceedingly interesting cases: one of fracture of the *body* of the scapula, the result of muscular action, in a robust, athletic man; another of fracture of the *cervix scapulae*, accompanied by a drawing illustrating the appearances of the bone; and the third of "*displacement of the lowest angle of the scapula*." The last is quoted from Mr. Liston's *Elements of Surgery*. It is an instance of a very rare accident in which the inferior angle of the scapula has escaped from beneath the overlapping edge of the latissimus dorsi muscle, in consequence of the arm having been raised too high. "The angle of the bone projects considerably, and the muscle is felt playing beneath it: the movements of the limb are limited and painful." The reduction is accomplished by raising the arm, and pressing the angle of the scapula inwards. Mr. Callaway makes the following ingenious suggestion concerning its cause: "I think it is a question worthy of consi-

deration, whether the accident depends at all upon the muscle having an origin from the angle of the bone; at any rate, I think this circumstance is a predisposing cause, and would be very likely to favour the accident, inasmuch as these fibres, taking their *point d'appui*, under peculiar circumstances, from the insertion of the muscle, would act upon the angle of the bone and draw it upwards and over that portion of the muscle arising from the dorsal spines. It would occur, I conceive, in weak, delicate persons. Were I to have a case of which I could not effect the reduction, I should not hesitate to divide by the subcutaneous section the obstructing fibres of the muscle," &c.—p 98.

Mr. Callaway makes no mention of compound fracture of this bone, nor of the sub-osteal inflammations and collections of pus which sometimes occur after fractures of the body of the scapula, the result of violent contusion, and which are so painful and so troublesome.

A very large portion of the volume is justly devoted to the elucidation of the *dislocations of the shoulder-joint*.

The great size of the head of the humerus, as compared with that of the glenoid cavity, the looseness of the capsule, and the extent and variety of motion enjoyed by the arm at the shoulder, all conspire to render the luxation of the humerus a relatively frequent accident, notwithstanding the numerous safeguards which have been instituted against its occurrence. Thus out of 575 dislocations cited by Mr. Callaway, from statements made by Malgaigne and Dr. Norris, 370 were of the humerus; and Bichât published that, during seven years, a greater number of cases of this dislocation was received at the Hôtel Dieu, than of all other dislocations collectively.

From the tables of statistics, quoted by Mr. Callaway, published by Malgaigne in his *Etudes Statistiques*, which must have cost the author a vast amount of labour and diligent inquiry, we may deduce the following inferences: 1st, that dislocation of the scapulo-humeral articulation most commonly occurs between the age of 15 and 48 years, the proportion relatively to the aggregate of luxations being as 113 to 216. This great frequency is not surprising, consideration being had to the greater exposure to the producing causes of luxation incident to this the most active period of life, and to the fact, as before established, of the comparatively common occurrence of this particular displacement. But we find also, as a 2d deduction from these tables, that as life declines the proportionate frequency of this increases; thus, between 45 and 55 years, out of 101 dislocations, 73 were of the shoulder; between 55 and 70, of 129 dislocations, 101 were of the shoulder; and beyond 70, of 35 luxations, 30 were at this articulation. It is presumable that the increasing susceptibility to this form of displacement is due to the lessening power of the muscles which pass from the head of the humerus to the scapula, and which are certainly the efficacious agents of the retention of the humerus in its normal relations with the scapula. As might have been anticipated from the difference in the occupations and habits of the sexes, the male is infinitely more liable to dislocation of the shoulder than the female, the proportion in these cases being as 223 of the former to 87 of the latter. The number varies also in the different seasons; thus of 320 cases, 80 occurred in the spring, 67 in the autumn, 69 in the summer, and 104 in the winter.

Mr. Callaway alludes to the vagueness and confusion which exist with reference to the *nomenclature* of the varieties of this accident; and in order to simplify and clarify this part of the subject, he speaks of dislocations of the head of the humerus, as being either *anterior* or *posterior* relatively to a line passing from the acromion process downwards, through the centre of the glenoid cavity, and continued along the scapular head of the triceps muscle; these

chief divisions are made to comprise all the varieties, as follows : the *anterior* includes the axillary, the sub-scapular, and the subclavicular ; the *posterior*, the subspinous. The comparative weakness of the lower side of the capsular ligament, and the direction impressed upon the head of the humerus by the most fruitful cause of its dislocation, falls upon the outstretched arm, account, as Mr. Callaway mentions, for the more frequent displacement below the glenoid cavity ; while the natural inclination of the shoulder forwards disposes the head of the bone, when thrown from its socket, to fall anteriorly rather than behind the central line of the axilla. Of course, however, a direction will be assumed in accordance with the line of action of the dislocating force, thus determining the particular situation which the bone will occupy. We think that Mr. Callaway has acted wisely in admitting only the limited number of special displacements, instead of the long array of conceivable luxations of some of the French surgeons, and of which he presents a tabular arrangement quoted from different authors.

The points of chief interest in the author's remarks upon these dislocations have reference to the diagnosis of those cases in which the head of the humerus has fallen below the glenoid cavity. It has been very generally taught that in these the arm is always lengthened, the measurement being made from the acromion process to the condyles of the humerus. Mr. Callaway shows the incorrectness of this assertion, and explains its fallacy by the aid of a diagram. The head of the arm-bone either rests "against the anterior costa of the scapula, and towards the ribs, that is, in the axilla, or it may have been driven among the fibres of the subscapular muscle, lying almost in the subscapular fossa, while the neck is embraced by some of the fibres of the muscle. The former is that species of dislocation in which there is lengthening of the arm, and which is so easily reduced ; while in the latter, the lengthening is less marked, often absent, and the difficulty of reduction greater"—p. 108. And the truth of these statements may be appreciated by supposing a perpendicular line dropped from the point of the acromion ; if the head of the bone fall without this line, of course the distance of the condyles from the acromion will be increased ; if within, the distance will be diminished. The first category will apply to all the dislocations *into the axilla* of Mr. Callaway's division ; because even if the head of the humerus should fall *within* this line, owing to the obliquity of the direction of the inferior costa of the scapula, it will still be so much farther removed from the acromion process as to verify the assertion ; the second proposition will apply to the *subscapular* dislocations of Mr. Callaway. The mere determination of the length of the arm will not, therefore, characterize this accident, since it may be shortened in a dislocation as well as in a fracture. But the author lays down another means of diagnosis which promises to be more certain. He says, p. 109, "if the vertical circumference of the affected shoulder, *i. e.*, from its top to the anterior fold of the axilla, be measured and compared with the sound one (usually about $18\frac{1}{2}$ inches), a great increase of about two inches will be found ; *this is an invariable concomitant*, for the head of the bone, go where it will, must distend and displace parts, augmenting the depth of the shoulder and the breadth of the base of the axilla."

Mr. Callaway alludes to the observations of Dupuytren, Guérin and Dr. R. W. Smith, on congenital dislocations of the shoulder. We shall not further notice this point, having so recently presented to the readers of the Journal an abstract of the contents of Dr. Smith's volume.

The author passes in review the various modes of reducing the luxation of the head of the humerus from its false position below the glenoid cavity ; but we need not review them here. Several cases of the accident are also adduced.

His remarks on the *sub-clavicular* and the *sub-spinous* dislocations are brief, but sensible.

With respect to the attempt to reduce a long-standing dislocation of the head of the humerus, Mr. Callaway briefly glances at the conflicting opinions and experiences upon this subject, and then expresses himself in the following judicious manner: "The circumstances which would deter me from any attempts at reduction would be, first, *the lapse of ninety days*; the patient having a tolerable use of his arm; the formation of bony deposit about the head of the bone assisting in the formation of a new joint; the history of previous inflammation concomitant with the injury, which would make all the parts adherent, and, perhaps, the muscular fibre soft; a rigid condition of his arteries; and, lastly, obscurity or obliteration of the glenoid cavity."

We are much surprised at the meagreness of this portion of the chapter, considering the importance of the question at issue, and the abundance of materials to illustrate and substantiate the true doctrine concerning it. The condition of the head of the bone and of the surrounding soft parts, in an old dislocation, should have been described and illustrated by cases, with or without drawings; the obstacles to its reduction should have been stated, together with the advantages and disadvantages of the proceeding; the dangers attending the attempts at restoration, with the fruits of experience in unsuccessful and fatal as well as in fortunate instances; and the degree of motion and of usefulness of the member in successful cases—all these facts should have been dwelt upon, and the chapter would have been a very valuable portion of the volume.

The author concludes this chapter with a notice of the complications of dislocation of the shoulder, and with the details of an interesting case of this accident, which was attended by "total loss of the motor and sensory influence of the median and ulnar nerves;" the luxation was reduced after the lapse of seven weeks, and by the diligent use of proper remedies the patient ultimately, after many months, recovered perfectly.

"Injuries to the longer head of the biceps" furnish the author with a subject for the succeeding chapter. He thinks that the accident, which is usually considered to be a partial dislocation of the shoulder forwards, is really either *a dislocation or a rupture of the long tendon of the biceps muscle*.

He first reviews the history of the origin and progress of our knowledge upon this interesting point, which has attracted the attention of some eminent surgeons, and then sums up the diagnostic appearances of each of these conditions of the tendon.

Rupture of the tendon usually takes place, it seems, in the decline of life, when the nutrition and consequently the tenacity of the tissues have begun to fail. The point at which it commonly occurs is about midway between the glenoid cavity and the anatomical neck of the humerus. If the separation take place within the groove, there is generally considerable effusion into the joint, and a marked retraction of the lower portion of the tendon towards the belly of the muscle, while the muscle itself swells in consequence, as is well illustrated in the drawing appended to the text, p. 148. But when the rupture has occurred nearer to the glenoid cavity, the retraction is rendered inconsiderable by the connections existing between the tendon and the cellular tissue of the capsule and the groove. In either case, the capsule of the joint is but slightly, if at all, ruptured. In the cases of *dislocation*, the tendon was thrown inwards and to the lower part of the joint in three, upon the greater and lesser tuberosities respectively in the other two. There is more pain and inflammation of the joint, and greater loss of muscular power in this than in the other accident, because the displaced tendon plays the part of a foreign

body, as of a loose cartilage, in the cavity, and, of course, the usual changes produced upon serous surfaces by continued irritation are present. In both conditions of the tendon, there is lateral and posterior flattening of the shoulder, and prominence of the head of the bone anteriorly, thus inducing the belief in the existence of a partial dislocation forwards. As we have hitherto found fault with Mr. Callaway for not having described the post-mortem appearances of the accidents of which he treats, we will do him the justice to quote his remarks upon the changes found after death, in those cases in which the tendon had been ruptured. He says, p. 150, "The tendon is found usually in one of three conditions: firstly, lying loose in the joint, and presenting a fringed cellular edge; secondly, closely adherent to the capsule of the joint; or, thirdly, inseparably attached to the neck of the humerus and its bicipital groove. In both these latter cases the capsule of the joint is much thickened, as though it had become strengthened by the fibres of the tendon. The morbid changes which take place in and about the articulation, as a consequence of the injury, appear to be two: first, a coalescing of the capsule and synovial cavity of the joint with the bursa between the capsule and the acromion, or, to speak more correctly, the formation of a false joint between the head of the humerus and the under surface of the acromion; secondly, in soft, oily, and caseous bones, in which there is deficiency of phosphatic deposit, a change takes place in the head of the bone, the anatomical neck slides slightly downwards (chiefly in old people), and assumes a rather more lateral aspect than is normal, while the inner shell of the bone passes upwards and inwards, and penetrates the cancelli. This, I think there can be no doubt, is the result of the upward pressure against the acromion process. In Sir A. Cooper's case, the tendon is said to have united. With every possible submission to so high authority, I think he must have meant that it had united with the capsule of the joint. The deltoid muscle is not so much affected by the change in the joint as would be expected: occasionally it is slightly atrophied, but the muscle soon again recovers its size and tone. Should there appear to be much wasting of it, the surgeon would then have to decide upon the probability of its dependence upon some injury to the posterior circumflex nerve: in this case, sensation over the posterior fold of the axilla, and over the insertion of the deltoid, would be much impaired."

The treatment in these cases consists in preserving the shoulder at rest, in combatting inflammation, and, after a proper time, instituting passive motion. The best position for the shoulder is that which it assumes in Velpeau's method of treating fractures of the clavicle, the hand being placed upon the sound shoulder and fixed there. Mr. Callaway adduces several instances of the accident.

The last subject to which the author directs his attention is that of *fractures of the head of the humerus*. These he divides into fracture of the surgical and of the anatomical necks, and of either or both of the tuberosities. We do not find that he has added anything to our information on this subject, and shall therefore conclude our notice of his treatise.

In closing the volume, we cannot but regret that Mr. Callaway had not bestowed more care and labour upon it; for we are sure, from the degree of capability which it really evinces on the part of the author, that he might easily have rendered it of greater and more enduring value. Our readers must have observed, in the quotations which we have made from it, many inaccuracies and inelegancies of style and diction, and have inferred that it often lacks the evidence of extended and rigorous study—such as is alone admissible at the present day.

F. W. S.

ART. XIX.—*Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume the Thirty-third. 8vo. pp. 360. London, 1850.*

THE first paper contained in the present volume of Transactions is the account of a "*Case of a Foreign Body impacted in the orifice of the Third Branch of the Right Bronchus*," by John Gregory Forbes. The case is preceded by some interesting remarks on the propriety of attempting the removal of a foreign body so impacted.

Upon this question, much difference of opinion exists among surgeons.

"On the one hand, it is alleged that the introduction of instruments within the air-passages is a difficult and dangerous proceeding; that there is much uncertainty, from the irritation to which they give rise, whether they can be successfully employed; and that as, in some instances, the offending substance has been loosened and ejected, it is more prudent not to interfere; on the other, it is urged that if the natural powers fail in effecting so desirable a result as its early expulsion from its situation, the symptoms which follow are usually so formidable, and the life of the patient is placed in such jeopardy, that in the absence of any special circumstances forbidding an operation, its extraction should be attempted."

The truth of the grounds upon which this latter opinion is founded is admitted by Mr. Forbes. But to decide the question, he considers that more extended experience, derived from individual cases, is necessary, as the only means of determining whether the dangers resulting from the efforts made to extract the foreign body are greater than those to which the patient is exposed, if it is allowed to remain undisturbed in its position, and the powers of nature are trusted to for its expulsion.

"The symptoms," Mr. F. remarks, "induced by the impaction of a foreign body in a bronchial tube differ materially from those which arise when it moves up and down in the air-passages during the act of respiration. In the latter case, the continued laryngeal irritation gives rise to repeated attacks of convulsive cough and threatened suffocation; in the former, these are not observed, but the symptoms are then referable to the impediment offered to the ingress and egress of the air on one side of the chest, to which succeed inflammation of the bronchial membrane, and of the parenchymatous tissue of the lung, entirely, or in part, and sometimes of the pleura itself."

"The fatality which ensues from a foreign body remaining in the air-passages led Mr. Proctor to remark, 'that if not removed, it tends, sooner or later, to the one inevitable consequence—the destruction of the patient.' In looking over, however, the histories of published cases in which it was fixed in a bronchus, we find that in a small proportion it was coughed out without having produced any very serious and irremediable mischief, and a rare case is recorded by Royer Collard, in which no thoracic disease appeared to have been induced."

"In other cases on record, inflammation and suppuration took place, by which the foreign body was loosened and expelled, and even under this complication some patients recovered. But such favourable results cannot be anticipated with any confidence. In by far the larger proportion of cases of this description which have been recorded, much suffering was endured, severe pulmonary inflammation was set up, and though life was in some instances prolonged for several years, the patients at last succumbed, worn out by the continued irritation and hectic, before or shortly after they have been unburdened of the cause of their misery."

In deciding upon the question of opening the trachea and endeavouring to seize the foreign body with the forceps, many circumstances call for attention.

A substance of small size and light weight, with a smooth surface and soft texture, is less likely to cause inflammation, and there is more probability of its being coughed out than if it happens to be of an opposite nature. The age of the patient also and the previous state of his health are of importance.

In young children, the small size and delicate structure of the parts to be interfered with may prevent the possibility of the operation being effected; and in older persons, who have suffered from diseased lungs or other exhausting maladies, the prospect of a successful issue may be so slight as to forbid the operation. Neither of these objections, however, apply to the case of a healthy adult; and it may be well, therefore, Mr. F. concludes, to endeavour without delay to rid him of such a fruitful source of danger.

"In support," he remarks, "of the practicability of the operation, it is sufficient to refer to the two cases mentioned by the late Mr. Liston, in his '*Practical Surgery*,' the only instances, as far as I am aware, on record, in which it was successfully accomplished." "In neither case was the proceeding attended with much difficulty, and the patients recovered."

"We have, however, high authority for stating that, in some cases, serious and insurmountable obstacles do present themselves to the completion of the operation. In the case recorded by Sir Benjamin Brodie, in the twenty-sixth volume of the *Transactions of this Society*, though attempts were made on two separate occasions to extract a coin from the right bronchus, through an opening in the trachea, the convulsive cough was so great on the introduction of the forceps that it could not be felt, and it became necessary to desist. The same occurred in a case lately published by Mr. Solly, and a similar one is mentioned by Mr. Porter, as having occurred in the person of a boy five years of age, in whose right bronchus a bean had been lodged. Several attempts were made to remove it, but without success. The presence of the forceps in the trachea produced the most intense distress, and the operation was abandoned. The bean was afterwards moved by a probe, and coughed out through the wound."

Another argument against the operation is the difficulty of determining the exact position of the foreign body.

"This," says Mr. F. "is undoubtedly attended with much uncertainty, and it becomes a matter of great moment to decide the question as to the nature of the evidence upon which the attempt to extract it would be justified. The auscultatory signs, though open to fallacy from the existence of previous disease in the lungs, are the chief guides. In the case now to be related, a persistent expiratory sound at first, a '*cooing rhonchus*,' and degenerating into a peculiar '*whiff*' or '*puff*,' heard most clearly over the right bronchus, together with the pain experienced in that situation, and the consequent voluntary efforts made by the patient to expel it from thence, were the symptoms upon which the chief reliance was placed as indicative of its presence."

"Supposing then the diagnosis to be as clearly established as it can be under such circumstances, and from the alleged nature of the foreign body there is small probability of its being ejected, Mr. F. cannot help feeling that an early attempt might be made to extract it by the usual mode. Although on the first trial it may not be possible to seize or even to feel it, a second may be more successful, and if it cannot be extracted, it may be displaced sufficiently to allow of its expulsion, as occurred in Mr. Porter's case already quoted. But suppose, as has happened, every effort to remove it should fail, further experience is wanted to prove that the operation itself is attended with that amount of risk which would warrant the surgeon in depriving the patient of the prospect it affords of immediate and most probably permanent relief. It is the opinion of Sir Benjamin Brodie that under all circumstances the trachea should be opened; and Dr. Mason Warren, of Boston, states 'that if a case of the kind occurred to him, he should at once perform the operation of tracheotomy, and by a free use of ether attempt to allay the irritability of the air-passages, so as to allow a more easy exploration by instruments than is generally afforded

in the natural state.' He admits at the same time that the judgment of the surgeon must be determined by the circumstances of the particular case."

The case related by Mr. F. is that of a female 46 years of age, in whose trachea a portion of bone covered with cartilage entered whilst she was eating some soup. The operation was not considered advisable from the uncertainty as to the exact position of the foreign body, and from the symptoms not being of that urgent nature which called for immediate interference. The patient, however, continued to grow worse, and she died at the end of the twenty-sixth day after that on which the bone had entered the trachea. On the examination of the body, there was found in the right bronchus, at the distance of an inch and a half from the point of bifurcation of the trachea, and five inches and a half from the lower border of the thyroid body, a small piece of bone, weighing when dry $3\frac{1}{2}$ grains, having a concave smooth facet, and a convex rough one, and one very sharp edge; its breadth being three-eighths, and its length a quarter of an inch. It was firmly impacted in the orifice of the third branch from the bronchus, which passed into the middle lobe. The surrounding lung presented indications of intense inflammation.

"The lower two-thirds of the right lung were of an ashy slate colour, of dense consistence, very offensive odour, and infiltrated with a purulent fluid. Small portions of it sank in water, and when washed it had much the appearance of coarse dark sponge, though no distinct cavities containing pus were visible."

In this case, for the reasons mentioned, it was judged inexpedient to attempt the extraction of the foreign body by an operation; Dr. F. admits, however, that "possibly a greater amount of experience might have modified this opinion."

"It is certain," he adds, "that had it been attempted, some difficulty would have arisen from the depth to which the piece of bone had penetrated; being at least four inches from the top of the sternum. Two bronchial branches had been passed by it, into the first of which, from its size, it is more than probable that the point of the forceps would have entered, and this might have given rise to such distress as to have baffled any further proceedings."

The unusual course of the carotid artery, bringing it, in this case, in proximity to the seat of incisions, would have exposed it to injury.

"With due caution," Mr. F. remarks, "it would not probably have been wounded by the knife, but it might have been bruised and injured by the forceps. Though such a deviation from its course could not be looked for in other patients, it nevertheless deserves attention, and fully bears out the remark of Mr. South, 'that the varieties of the vessels in the neck render a careful inspection necessary before proceeding to the operation.'"

The second paper is "*On the Section of the Tendo-Achillis in some cases of Fracture of the Bones of the Leg*," by Campbell De Morgan.

The subcutaneous division of tendons for the removal of difficulties which sometimes occur in the treatment of fractures, especially of the bones of the leg, is an operation which has, it appears, been successfully put in practice by the surgeons of Continental Europe, and two cases of fracture of both bones of the leg are detailed in the paper before us, the first by Mr. Shaw, and the second by Mr. De Morgan, in which the division of the tendo-achillis was attended with complete success in suspending the violent spasmodic action of the muscles, by which the permanent reduction of the fractures was prevented and great suffering caused to the patients.

"There can be no question," remarks Mr. De Morgan, "as to the twofold benefit derived, in these cases, from this simple operation, which, while it rarely

fails in effecting the object for which it is performed, is not often attended with injurious consequences. The first and most important benefit was the immediate cessation of all opposition to the replacement of the fractured bones, and to their retention in their proper positions. After the division of the tendon, the simple and ordinary apparatus was sufficient for this purpose; whereas all the means adopted before had induced spasm, and increased only the evil they were intended to remedy. The relief given to the sufferings of the patients, was, however, not less immediate, and was hardly less important. The pain and the restlessness, which before had been constant, at once subsided; and the spasms which took place, not in the muscles of the calf only, but in all the muscles of the leg, and in Mr. Shaw's case, in those of the thigh also—were at once allayed. Nor did they, in either instance, return during the remainder of the treatment."

"The cases of fracture of the tibia and fibula in which the surgeon fails, by ordinary treatment, to remove or obviate the difficulties incidental to such injuries, and in which, therefore, this operation might naturally suggest itself, are not of ordinary occurrence. But it may still be a question whether the division of the tendo-achillis, or of other tendons, might not be advisable. The present state of our knowledge with regard to the results of tenotomy in general, is, perhaps, not sufficiently exact to justify a recommendation of the operation in such cases. As a means of relieving spasm consequent upon local injury, the operation has been too rarely performed to allow of any conclusion on the subject. If, however, it should be found that results as satisfactory as were obtained in the cases now brought forward might be calculated upon in those of less severity, but in which the means used by the surgeon were counteracted, or prolonged pain and restlessness were present in consequence of spasmodic contraction of the muscles, this operation would prove a valuable adjuvant to the ordinary treatment."

The next paper is "*On the Identity or Non-Identity of the Specific Cause of Typhoid, Typhus, and Relapsing Fevers*," by William Jenner, M. D.

The facts set forth by Dr. Jenner are intended to prove not only that the three diseases just mentioned are distinct affections, in their symptoms, course and lesions, but are each produced by a distinct specific cause.

After presenting the diagnostic symptoms of the three fevers to which the paper refers, a series of tables are presented, showing the number of cases admitted into the London Hospital, during each month of the years 1847, 1848, and 1849, with *all* the cases in which two or more persons suffering from typhus, typhoid, and relapsing fever, were admitted from the same house; the age, sex, degree of intimacy of the individuals, and the nature of the fever under which they laboured; with a view of showing that each of those diseases was derived from its own distinct focus of infection.

With the disease denominated *relapsing fever* by Dr. Jenner, we confess that we are not familiar, and lest our readers may be so likewise, we present his account of its diagnostic symptoms. These are

"Sudden rigours, headache, skin hot and dry, tongue white, urine high-coloured, bowels regular, occasional or frequent vomiting, loss of appetite, absence of abnormal physical abdominal signs. In severe cases, jaundice, profuse sweating on about the seventh day, followed by apparent restoration to health; on from the fifth to the eighth day, reckoning from the apparent convalescence, repetition of the original symptoms, with greater or less severity; again terminating in sweating, and then permanent convalescence."

After a short recapitulation of the facts exhibited by the tables, Dr. Jenner remarks:—

"The foregoing tables demonstrate that in every month of 1848 and 1849, several cases of typhoid fever and typhus fever were admitted; that the epidemic constitution favourable to the spread of typhus fever had little influence in diminishing or increasing the absolute number of cases of typhoid fever; thus,

during the first eight months of 1848, sixty cases of typhoid fever, and two hundred and ninety-two cases of typhus fever were admitted into the hospital; and during the corresponding months of 1849, seventy cases of typhoid fever, and one hundred and twenty-one only of typhus fever; so that, while the cases of the latter disease had diminished nearly three-fifths, the cases of the former had increased only one-sixth.

"As some writers have asserted that there are certain transition cases to be observed, marking the passage of one epidemic constitution into another, I ought here to remark that, with reference to the characteristic peculiarities of typhoid fever, and the rose spots in particular, they were as well marked in the autumn of 1846 as during the epidemic of relapsing fever in 1847, or of typhus in the autumns of 1847 and 1848, or as they are at the present moment. The spots have undergone no change; have experienced no modification; although the epidemic constitution, on which the difference in the rash is said to depend, must have varied more than once. The same is true of the mulberry rash of typhus fever. It presented, in the few cases observed in 1846, the same characters as during the epidemic of 1847-48; the same characters during that epidemic as at the present moment, when the number of the cases of typhoid fever bear to that of typhus fever the proportion of three to one.

"So with regard to the intestinal lesion. In all the fatal cases examined in the three years referred to in which the mulberry rash existed during life, Peyer's patches and the mesenteric glands were absolutely free from disease; and in every fatal case in which rose spots were noted during life, serious lesion of the agminated and mesenteric glands was discovered after death. The lesion, like the eruption, was quite unmodified by that epidemic constitution which favoured the spread of typhus fever in 1847 and 1848; for example, though the constitution of the autumn of this year (1849) favoured the spread of typhoid fever, yet, when a man and his wife were admitted in August with typhus fever, the mulberry rash preserved its characteristics unmodified, and when they died, as both did, Peyer's patches and the mesenteric glands were found to possess their normal anatomical characters.

"There are a few cases included in the preceding tables, which may here be more fully adverted to with advantage. In November and December, 1848, forty-eight cases of typhus fever, and twenty of typhoid fever, were admitted into the hospital, *i. e.*, nearly one-third of the patients were affected with typhoid fever. At the latter end of October, 1848, a boy, fourteen years of age, went to reside with a family named Mitchell, in Adden Place, St. Pancras. The Mitchell's were at that time in health. The boy left his own home because his brothers were down with the fever. The lad was, early in November, admitted into the hospital, suffering from typhus fever. Early, also, in the same month, the man Mitchell, aged twenty-nine years, with whom the boy lodged, the man's daughter, aged seven years, and a female lodger, aged twenty-two, were also admitted with typhus fever. The other members of Mitchell's family, expelled from Adden Place, then removed to 21 Hertford Street, at least a mile from their former residence. At this time, so far as I could learn by personal inquiry, there was no fever in Hertford Street, and *certainly* none in the house in which they had taken up their residence. On November 22d, the two sisters of Mitchell's wife, aged respectively fourteen and twenty-two, who had removed from Adden Place with Mrs. Mitchell and her infant, aged four years, were received into the hospital, both suffering from typhus fever. On December 8th, the landlady of 21 Hertford Street, aged 60, was admitted with very severe typhus fever, and on December 20th the son-in-law of the landlady was also admitted with the same disease. I subsequently saw Mitchell's infant, aged four years, at its own home; it was similarly but very slightly affected. The only member of the family that escaped was the woman Mitchell, and she had had 'spotted typhus fever,' according to her own voluntary statement, some few years before. Here was a group of persons, whose ages varied from four to sixty years, and whose constitutional predispositions also must have varied infinitely, for there were several of them unconnected by blood, exposed to the poison of typhus fever (introduced among them by the lad aged fourteen), at the same time when typhus fever was only twice as prevalent as typhoid

fever, what was the result? Did one-third of the eight have typhoid fever? No, not one.

"In December, 1848, ten cases of typhus fever, and seven of typhoid fever were admitted into the hospital. Five cases came from one house; these five individuals varied in age from seven to fifty-two years; their degree of relationship was grandfather, daughter, and three grandchildren. All five had well-marked mulberry rash, were unequivocally affected with typhus fever. It is evident that, as at this time the number of those admitted with the two diseases was pretty nearly equal, two of these five ought, if the cause of the two diseases is identical, to have had typhoid fever, with rose spots.

"In March and April, 1849, eight cases of typhoid fever, and thirty-one cases of typhus fever, were admitted into the hospital. Between the 19th of March and the 10th of April, eight persons were brought to the hospital from one room, suffering from fever. Did one-fourth present the rose spots of typhoid fever? No, not one—all had well-marked typhus fever. In September, October, and November, 1849, eighteen cases of typhus fever, and forty-eight cases of typhoid fever, were received into the hospital, *i. e.*, nearly three times as many cases of typhoid fever as of typhus fever. During the same three months, a mother and her two daughters, aged respectively fifty-four, sixteen, and thirteen; a husband and wife, aged forty and forty-seven; a husband, wife, child, and lodger, aged severally forty, thirty-nine, twelve, and forty—*i. e.*, in all nine persons, were brought from three localities. At least five ought to have had typhoid fever, if that affection and typhus fever are due to the same specific cause. Was it so? No, in every case, the persons secondarily affected, whatever their age or sex, had the same disease as the individual from whom they caught it.

"In April, 1849, a girl suffering from relapsing fever was brought from a house in Fulham—in a few days her brother and two sisters were admitted into the hospital. Did either of the three latter have typhus fever, which was the prevailing disease, or typhoid fever, which was then also very much more widely spread than relapsing fever? No; all had the same fever."

"Before concluding, it will be well, summarily, to repeat that in 1848 one-fourth of the cases admitted into the hospital had typhoid fever; while from thirty-four foci of typhus fever, yielding one hundred and one cases, there was brought to the hospital once only a case of typhus fever and a case of typhoid fever from the same house; and during the same time, among five localities, affording nine cases of typhoid fever, one locality only yielded a case of typhoid and one of typhus fever. That in 1849, although eighteen foci of typhus yielded fifty-one cases, and four foci of typhoid fever afforded ten cases, not a single example of the two diseases being received into the hospital from one house occurred. With reference to the exceptional case, I must observe that for exceptional cases to be of any value in proving the identity of typhus fever and typhoid fever, they must be met with more frequently than similar exceptional cases are met with in diseases having a specific cause universally acknowledged to be different.

"Now, the following facts prove that, with respect to measles, scarlet fever, and typhus fever, such exceptional cases are as frequent as with respect to typhoid and typhus fevers. During the last three years, I have seen a case of typhus fever brought into the hospital from a house in which all the children were suffering from measles; another case of typhus fever brought from a house in which the children had scarlet fever; a girl admitted with scarlet fever, who had been on terms of intimacy with another girl admitted shortly before with typhoid fever, and in these cases no direct contagion for the diseases under which the patients laboured could be traced. It is also important to observe that the cases of scarlet fever admitted during the time specified were nothing like so numerous as the cases of typhus fever or of typhoid fever.

"The facts contained in this paper appear to me to prove, incontestably, so far as induction can prove the point, that the specific causes of typhus and typhoid fevers are absolutely different from each other, and to render in the highest degree probable that the specific cause of relapsing fever is different

from that of either of the former two. I have elsewhere attempted to prove that the course, the symptoms, the lesions, and the sequelæ of typhoid are typhus, are different, and as relapsing fever differs from both too widely, so far as symptoms and course are concerned, to be confounded with them, it follows that if small-pox be separated from measles, and both from scarlet fever, because their course, symptoms, lesions, and specific cause are different, so must, for like reasons, typhoid fever, typhus fever, and relapsing fever, be separated from each other, and regarded as absolutely distinct diseases, not merely varieties of each other, as are scarlatina anginosa and scarlatina sine eruptione, but distinct species of disease, as are scarlatina, rubeola, and variola."

Next in order are the histories of two cases of "*Complete intestinal obstruction, arising from disease of the sigmoid flexure of the colon and the rectum, in which the descending colon was successfully opened in the loin*;" the one related by Frederick Field, and the other by Josiah Clarkson.

The first case occurred in a stout male, thirty-three years of age. He had been affected for many months with derangement of the bowels—marked by occasional pains, tenesmus, and constipation—scanty stools, voided with difficulty—flatulence—distension of belly—with weight and uneasiness at the stomach after eating. These symptoms, after a time, increased in violence. They were, at first, temporarily relieved by purgatives. Vomiting after meals became added to his other symptoms. The patient was able to continue his employment, that of coach-axle forger, until within four days of the visit of Mr. Field, when the action of the bowels entirely ceased; all his symptoms became greatly aggravated, and he took repeated doses of brandy and castor oil, with the only effect of adding to his sufferings and producing vomiting. When seen by Mr. F., the abdomen was greatly distended and tympanitic, pain in the region of the transverse colon, increased by pressure; the pain was of a twisting character and shot down to the umbilicus; region of transverse colon somewhat bulging. The pain was aggravated in violent paroxysms, accompanied with strong tenesmus, continuing for about a minute. He vomited almost everything he took. Pulse somewhat increased in frequency, full, strong, and compressible; tongue coated with a thick pale fur, and not dry—much thirst.

The leading symptoms were but partially abated under the use of the various remedies that were from time to time employed. In attempting to relieve the bowels by injections thrown into the colon, the pipe could be introduced but about eight inches, its further passage being at this point prevented by an obstruction. At the end of twelve days, the condition of the patient becoming much worse—with incessant vomiting of a light-brown matter with a strong faecal odour, no evacuation per anum having occurred for sixteen days—all further efforts to prolong life by medical means were considered useless, and the operation employed by Amussat for opening the descending colon was proposed to the patient, and, with his consent, performed.

"The patient being extended on a bed with his face downwards, a transverse incision was made on the left loin, beginning at the ridge which marks the external margin of the erector spinal muscle (about two inches from the spine), and carried directly outwards. This incision was five and a half inches long, and was situated a finger's-breadth above the crest of the ileum; it passed through the skin and fat nearly one inch in depth down to the latissimus dorsi muscle. This muscle, and the quadratus lumborum were now divided to the extent of the incision of the skin, and a layer of fat, bounded on the inside by the external margin of the erector spinæ muscle, was brought into view. On dissecting this away to the depth of about half an inch, a thin transparent membrane was exposed. From the appearance of this membrane, which it

was conceived might be the intestine, it was thought advisable to pass sutures through it to retain it in its position, and subsequently to affix it to the edges of the wound. However, on penetrating it with the knife, a mass of soft granular fat started through the incision. A very large quantity of this fat was cautiously dissected away, and the finger was then introduced to search for the bowel, but no precise indication of it could be felt; the finger, when pressed upwards, rested on the lower part of the left kidney, while downwards it came in contact with the inner margin of the crest of the ileum. The wound being now of considerable depth, it was necessary to proceed with great caution, and clear away the fat little by little, which proceeding, from the looseness of the nature of the fat, was rather difficult, and occupied some time. At length, the bowel was brought into view, at the depth of about four inches; it was highly vascular, and having been cleared of fat, sutures were passed through it and held by assistants. An incision half an inch in length was made into the bowel, and an immense quantity of light-coloured fluid fæces immediately escaped. The patient had been vomiting similar fæcal matter during nearly the whole of the operation, but this vomiting now entirely ceased, and he was relieved of all his symptoms. The opening in the bowel was fastened by sutures to the skin; a large bread poultice was placed over the wound, and retained by a bandage passed round the body, the patient being enjoined to lie on the left side to facilitate the escape of the fæces. Scarcely two ounces of blood were lost during the operation."

The operation was performed on the 15th of May. From that time, the patient gradually amended—the wound gave little or no trouble; through it the fæces were regularly passed until the 22d, when fæces, preceded by flatus, were passed per anum. Subsequently, however, they were only passed from the artificial opening. Three or four stools in the twenty-four hours thus occurred—he had a short notice of them by a slightly painful sensation immediately preceding the evacuation. The fæces passed through the wound with great facility; the opening into the bowel was closed, in the interval of the evacuation, by the apposition of the sides of the wound in the integuments, so as temporarily to shut up the artificial opening.

From the 3d of June, Mr. F. remarks,

"The patient rapidly recovered his strength, nutrition proceeded perfectly, and he acquired his usual bulky form; the wound contracted to an aperture in the centre of the incision no larger than would admit an ordinary goose-quill, through which the fæces passed with facility. He was now able to resume his laborious employment of coach-axle forger, in which great and rapid muscular exertion was constantly required in lifting and striking heavy weights of iron; and in which also he was obliged to keep time with two other 'strikers' who worked under him at the same forge.

"He thus continued from midsummer, 1845, to Christmas, 1846, during which period I have heard him remark," says Mr. F., "that he had required as great weight and could do as much work as at any time in his life. There was nothing in his appearance and manner that would convey the most remote idea of his being the subject of so remarkable a deviation from nature as an artificial anus. Had his occupation been a light one, and his habits temperate and regular, he might have passed through life with little inconvenience from the artificial anus. The only interruption to perfect health which he suffered occasionally arose from temporary constipation, caused, it is probable, by tendency to contraction in the aperture, and probably also by the fæces becoming somewhat more consistent than usual."

The constitution was quickly remedied by passing a small-sized bone clyster pipe into the artificial opening, and injecting through this about a pint or more of warm water—by this means, the passage was dilated to the required diameter, and the fæces also were softened so as to admit of their easy evacuation. After a period, however, the tendency to contraction of the artificial

passage diminished, and the constipation was then relieved by a small dose of castor oil.

In the latter part of 1847, the patient applied to Mr. F. in consequence of severe pain in the right hypochondrium—pain and uneasiness in the same situation he had frequently experienced for some months—leeches and a blister were applied, and the same treatment was subsequently directed by Dr. Fletcher and Mr. Carter for a renewed attack of the same pain.

“The pain, however, still continued, and in time extended in a sub-acute form over the abdomen generally. His appetite now began to fail; he had frequent vomiting; the urine became scanty, and ascites set in, and notwithstanding a steady perseverance in medical treatment, he became rapidly worse and much emaciated. The abdomen became greatly distended, and at length between three and four gallons of fluid were drawn off by tapping. The fluid, however, reaccumulated; he was troubled with constant vomiting of large quantities of depraved bile, and had frequent diarrhoea; his system became greatly exhausted, and he died on the 25th of February, 1848; being three months from the commencement of his last illness, and *a year and nine months* from the time of the operation.”

“*Examination forty-eight hours after death.* Body greatly emaciated; lungs healthy; very slight old adhesions of the pleura on the left side; heart and large vessels healthy. The parietal peritoneum opaque, thickened, and generally covered with lymph; the convolutions of the intestines adherent together, and covered with lymph; spleen healthy; kidneys slightly congested; the liver much thickened and granular in texture; anterior margin of liver greatly rounded, and adherent to the peritoneum by the whole of its upper surface. The strictured portion of the intestine was situated at the sigmoid flexure; it was about four inches in length, and three-quarters of an inch in diameter, throughout the whole extent of the contracted part. When cut into, the whole of this portion was found to be filled with a plug of apparently firmly coagulated lymph, which entirely obliterated the canal.

“Having placed the diseased portion of intestine along with other morbid specimens in a jar of spirits of wine, for further examination, I found after it had remained some time that the plug had become broken up and detached from the bowel. On scraping the thick layer which remained from the bowel, the coats of the latter appeared contracted and slightly thickened, but were continuous; even the contracted portion of the intestine seemed to be formed of successive layers of lymph or fibrine, or inspissated cancers. It exactly resembled the deposits which take place in the larynx in acute laryngitis.”

The second case of intestinal obstruction occurred in a robust, healthy-looking female twenty-one years of age. Her symptoms were first, pain at the epigastrium, flatulence, nausea, and obstinate costiveness; to these were soon added headache, thirst, and general febrile disturbance; then pain about the umbilicus and left hypochondrium, increased upon pressure; slight and even distension of the abdomen; tympanitis; constant nausea, but no vomiting; a pulse of one hundred and ten, full and strong; flushed and somewhat anxious countenance; dry and hot skin; copious flow of high-coloured urine. The bowels were attempted to be relieved by active cathartics and injections. The colon-pipe passed up easily a distance of about six inches, but could not be advanced beyond this point by any manipulation. The general symptoms speedily became aggravated, and began to put on a serious aspect. The pain and distension of the abdomen became such as to cause Mr. C. to fear that peritonitis had commenced.

By leeches, the symptoms were somewhat moderated, but no evacuation could be procured from the abdomen. On the seventh day after that on which she had first come under the care of Mr. C., stercoraceous vomiting having taken place, and all the symptoms of her case having assumed a most

threatening aspect, the operation of Amussat was performed pretty much in the same place and manner as in the preceding case. Upon the division of the fibres of the quadratus lumborum muscle and the aponeurosis of the transversalis muscle beneath it—after the removal of a quantity of loose fat, the intestinalis was reached with very little difficulty, apparently not much distended.

“Four ligatures were passed through the intestine, two of which were fastened to the upper lip of the wound, and two to the lower. The intestine was then divided longitudinally between them, giving exit to a large quantity of fluid fæces; very little blood was lost. The operation lasted twenty minutes, and almost immediately after its completion, the patient expressed herself as being greatly relieved. She was placed in bed on her left side, without anything being applied to the wound.”

In two hours afterwards, it was found that the fæcal discharge had been very profuse, and was still continuing. The dirt being removed, a large soft poultice was applied to the wound, and the patient was replaced in bed in the same position as before. The operation had much relieved her, and her condition was in every respect satisfactory.

Without any untoward symptom, the patient steadily improved in her general health, and the wound gradually cicatrized and contracted, the opening in the bowel being of sufficient size to admit the index finger without difficulty, and giving exit to three or four healthy stools daily. On the eighteenth day from the operation, she voided three or four rounded lumps per anum, which at first were supposed to be scybalæ, but upon a careful examination were found to be merely indurated mucus.

In three weeks the patient was able, with a little assistance, to walk down stairs, and soon to take a part in household work. Her appetite became good, digestion was carried on with energy—she quickly regained her usual habit, and even presented some degree of *embonpoint*. Her menstrual periods were regular.

“For several succeeding months she was in a most satisfactory condition, capable of performing the duties and enjoying the pleasures of her situation in life. She was able to walk about the town, and no one meeting her would have supposed for an instant she had been the subject of an operation of this nature. She wore a pad over the orifice supported by a bandage round the belly, and as she had an evacuation only when these were removed, the inconvenience resulting from the situation of the anus was much less than she had expected or Mr. C. had ventured to hope.

“Whenever, as sometimes happened, the fæces were retained for a day or two, or she suffered an aggravation of the pain, which still occasionally troubled her, a dose of aperient medicine or the warm water injection would afford her almost immediate relief. The only difficulty experienced was the tendency to contraction which the opening into the bowel at this time began to exhibit, and which required now and then the use of bougies and other dilating agents.

“At the expiration of ten months, this contraction was becoming the source of very considerable annoyance, as it opposed a serious obstacle to the escape of the contents of the bowels. The evacuations gradually became less frequent, three, four or five days intervening without one, and even then they were only procured by dilating the orifice and administering injections. The pains became more constant and severe, the appetite began to fail, general disturbance of the digestive process followed, producing emaciation and debility.”

By the use of sponge tents and other appliances, a great increase in the size of the outlet was obtained; but unfortunately there was no corresponding increase in the quantity of matter evacuated. Notwithstanding every measure that was put in requisition, the bowels refused to discharge their contents, the

emaciation rapidly increased, and the patient eventually died on the evening of the 14th of September, 1847, *having survived the operation nearly fourteen months.*

“*Examination of the body twenty-four hours after death.*—On cutting into the abdomen, about a pint of clear, straw-coloured serum escaped. The parietal peritoneum was of a dark mottled colour, and presented innumerable tubercles, of various sizes, thickly studded over its whole surface. It was also much increased in thickness. The peritoneum covering the intestines was in a similar condition; and from the long-continued inflammatory action of which it had been the seat, the opposed surfaces of the convolution had become so firmly adherent to each other as to be separated only with the greatest difficulty. Adhesions of this character had also been contracted between the transverse colon and the liver, the spleen, and the stomach; on the right side the colon was also connected with the abdominal wall. The whole of these adhesions were remarkably fine and unyielding, almost approaching cartilage in their texture; and they thoroughly incorporated the surfaces of the abdominal viscera in one mass, not to be separated in many places with the scalpel. During life, they must have greatly interfered with the peristaltic action of the bowels. The transverse and descending colon were empty and contracted, but the whole of the small intestines, up to the duodenum, were greatly distended with consistent fæces; the ascending colon also contained some fæces, but in this part they were more fluid in their consistence. The mucous lining of these parts of the alimentary canal was of a dark colour, and presented numerous patches of ulceration. The most healthy portion was some inches above and below the artificial anus.

“A careful dissection of the parts involved in the disease and the operation revealed the following conditions: The obstruction was situated about six inches from the lower termination of the rectum, and on a level with the fundus of the uterus. It consisted of a dense cartilaginous substance, surrounding the intestine in this spot, and completely obliterating its canal. It appeared to have originated externally to or on the outer surface of the bowel, as this latter, at the point of obstruction, was pinched in, as though it had originally been tied with a ligature. This diseased structure was about the size of a pullet's egg, the greater part of it being situated anteriorly, whereby it had pushed the fundus of the uterus forward, producing slight anteversion; it was also firmly connected with this organ. On laying open the bowel, and dividing the growth in a line corresponding with it, it was found that the channel was obliterated for the distance of half an inch, and this occlusion was so complete as even now to prevent the possibility of establishing a communication between the upper and lower portions of the intestine except by the aid of the knife.”

The sixth paper contains a detail of “*Chemical Researches on the Nature and Cause of Cholera*,” by Dr. Robert Dundas Thompson. From an analysis of the blood obtained during the period of the disease marked by rice-water discharges and collapse, it was ascertained that there was a considerable augmentation in its specific gravity. In the ratio of serum to clot, the aberration from health is not great—but this in some measure depends upon the increase in the weight of the serum, as indicated by its specific gravity. The watery portion of the blood is greatly diminished. The consequence fairly deducible from eight observations enumerated in one of the tables given by Dr. Thompson is that,

“In the lymphatic or collapse stage of cholera, the watery portion of the blood has diminished by at least 7 per cent.; so that if we were to consider with some physiologists the total amount of the blood in the human body to approach 22 lbs., it would appear that in the spasmodic cholera, at least 1½ lbs. of the watery part of the blood have been extracted from the fluid and poured into the intestinal canal. This, however, is taking the most favourable view of the circumstances. But, if we estimate the amount in some of these cases where the diminution of fluid in the blood is at a minimum, then the per

centage reduction will reach as high as 13.”—“During the prevalence of cholera, a specimen of blood obtained by hemorrhage from the nose was put into Dr. T’s hand by his friend Dr. Pagan. The patient laboured under an affection of the mucous membranes of the air tubes.” It is the only specimen of blood which he has hitherto found to assimilate to that of the lymphatic stage of cholera.”

From a number of analyses and facts detailed by Dr. T., the conclusion seems legitimate that there is nothing abnormal in the amount of globules, albumen, and fibrine of the blood in cholera; and that the disease, as affecting the blood, consists chiefly in a diminution of water; from other analyses which are given, it is shown that the equilibrium of the saline constituents of the blood are also decidedly disturbed. While there is in the same quantity of blood a larger amount both of earthy and soluble salts, there is a less quantity of the soluble salts in proportion to the earthy ingredients.

“The method of restoring the balance which has been interfered with,” Dr. T. remarks, “would not be by adding more soluble salts, which are already in excess by upwards of one-third, but by subtracting a certain amount of the earthy substances. It is not, however, to be supposed that any such mode of treatment could be attended with any benefit, for omitting the fact that besides saline matters albuminous substances also escape from the blood in this stage of the disease, it must be obvious, on even a cursory examination of cholera, that the condition of the blood is merely a symptom of the disease—an effect of some powerful atmospheric cause of which hitherto we have not been permitted to take cognizance.”

The discharges from the bowels in cholera, according to Dr. T.,

“Are always characterized by the presence of what have been termed flocculi. These have generally been assumed to be coagulated albumen. But careful examination under the microscope has demonstrated these masses of organic matter to be chiefly epithelial scales, derived without doubt from the surface of the intestinal mucous membrane, as in the case of the excretions of infants at the breast. These fluids are almost always alkaline; in one instance, however, the fluid was strongly acid, after being kept for twenty-four hours, and on the removal of the cork of the bottle a quantity of carbonic acid was evolved. It is quite possible that the fermentation was due to the presence of sugar in the intestinal canal, derived from milk, which was freely administered, in mixture with eggs, to the patients in the cholera hospitals of this city.”

“Usually, the fluids, as evacuated, when allowed to settle, yielded by boiling, or the addition of an acid, distinct evidence of the presence of albumen. The quantity, however, in true rice-water cases, was generally insignificant. On comparing these results with the analyses of the various fluids which make their appearance in serous and mucous cavities, as a result of diseases, it would almost seem that the intestinal mucous membrane had in this disease assumed the functions of a serous membrane, since the liquid evacuated bears a close resemblance, in composition, to the fluid deposited in local dropsies, and does not correspond, as has been generally asserted, with the serum of the blood. It deserves attention, however, that the natural fluids of the mucous membrane bear a close resemblance to those of the serous tissues, inasmuch as they consist of an alkaline fluid, with a small per centage of salts, dissolved in a large amount of water.”

From analyses given by Dr. T., it is shown that the nature of the salts in the rice-water evacuations is precisely similar to that of the saline matters found in the serous fluid of hydrocele and hydrocephalus.

“The characters which have been now detailed,” Mr. T. remarks, “apply to the usual rice-water dejection; but cases,” he adds, “frequently occurred in which the amount of organic matter was found much more considerable, although the proportion of salts was not materially augmented.”

When death occurs in the collapsed stage of cholera, the largest quantity of urine which Dr. T. has seen taken from the bladder was about a drachm; but usually the secretion may be said to be totally suppressed. On testing the minute quantities which were obtained, they seemed to contain the ordinary constituents.

As soon as the stage of reaction has terminated favourably, and the patient is so fortunate as to reach the third stage, or that of reaction, according to the researches of Dr. T., the morbid condition of the intestinal discharges commence rapidly to diminish—they become marked by the presence of bile—the blood begins to assume its normal condition—and a state of disease is replaced, before long, by one of health.

The condition of the atmosphere during the prevalence of cholera was carefully examined by Dr. T.; the presence of no organic body could be detected in it.

From the various analyses and experiments detailed in the paper before us, Dr. T. remarks that

“The following are the conclusions which seem deducible from the previous experiments:

“1st. That the incipient stage of cholera does not differ materially from the common forms of diarrhoea, inasmuch as its treatment is successfully managed by similar means, and their result may lead to the inquiry—Does not the removal of the symptoms of the disease by narcotics, and, therefore, the retention of the fluids in the system, afford an argument against the idea of a morbid poison being the cause of cholera?

“2d. That in the second stage of cholera, a lymphatic fluid is diffused from the blood into the intestinal canal, corresponding exactly in chemical composition with that secreted or diffused through the serous membranes in hydrocele and hydrocephalus, and other forms of dropsy. Compared with healthy blood, it appears that the salt which has diffused most largely into the intestines is common salt, while the albumen of the blood possesses this power of transference generally in a very limited degree. The facts seem to show that this stage, instead of as in the natural state, the diffusive power of the mucous membrane being exerted from the intestines towards the blood, the reverse action occurs; thus pointing to a parallelism with purely physical phenomena. Conjoined with other characters, they supply an argument for the inquiry—May not cholera be an *Epidemic intestinal catarrh*, influenza being an *Epidemic respiratory catarrh*?

“3d. In the third stage, the lymphatic fluid ceases to be poured out from the blood. The bile is excreted, and the normal diffusion from the intestines to the blood resumes its action.

“4th. There is no evidence of the existence of any organic body in the atmosphere during the prevalence of cholera, and hence the inquiry is suggested—May not this and parallel diseases, which are not contagious, such as ague, be principally due to meteorological and physical influences, acting on debilitated habits, and thus a distinction be established between them and contagious affections produced by morbid poisons, as typified by small-pox?”

The ensuing paper is the history of a “*Case of Structure of the Œsophagus, fatal two years and three months after accidentally swallowing soap lees*,” by Wm. Basham, M. D. A female, 22 years old, drank by mistake some of a caustic solution of impure carbonate of soda. She did not swallow more than a mouthful, as she spat out the portion in her mouth on discovering her mistake. She does not appear to have suffered any pain at the time, or any other inconvenience than the soapy disagreeable sensation in the mouth and pharynx, till near two hours after the accident, when severe vomiting commenced, and continued with but trifling intervals for five days. She was then admitted into the Westminster Hospital, July 16, 1847. Her symp-

toms now were great prostration, red, moist and glazed tongue, pulse 84, small and weak, obscure tenderness or rather soreness of abdomen, arising apparently from frequent retching; no pain on pressure, except at the epigastrium; no tympanitis; skin of natural temperature; no constipation; deglutition painful, and followed by rejection of all ingesta, whether fluid or solid. Countenance expressive of exhaustion. The mucous surface of the tongue, cheeks and pharynx, although red and injected, appeared merely denuded of epithelium; there was no indication of abrasion or ulceration.

Under the use of oleaginous laxatives and demulcents, calomel and opium, a blister to the throat and upper part of sternum, and a mild and farinaceous diet, the stomach gradually recovered its quietude and natural digestive powers—food and drink were retained, and a marked improvement in the patient's appearance was observed. Pain was occasionally felt at the upper margin of the sternum and between the shoulders. Ten years after admission, she was discharged at her own request.

Eleven months from this period, June 8, 1848, she was re-admitted, suffering from very urgent dysphagia—emaciated, weak, and looking like one half starved. She stated that a few weeks after she left the hospital last year, she began to feel occasionally a difficulty in swallowing solids, which increased so much that she was obliged to live on spoonfood; that during the last four weeks, the difficulty of swallowing had rapidly increased, and that for the last eleven days every species of ingesta came back again.

The œsophagus was examined with a small gum-elastic catheter, No. 8; some trifling obstruction was felt at a point corresponding to about one inch below the cricoid cartilage; about one and a half to two inches from this spot, an impediment to the passage of the instrument presented itself, which it required steady and prolonged pressure to overcome. Beef tea was injected into the stomach, and subsequently a little port wine. The patient rapidly improved, and next day was able to swallow beef tea and arrow-root; a tube of increasing size was passed daily. The patient was still unable to swallow any solid portions of food. On the fifth day after her admission, an unsuccessful attempt to pass the tube through the lower stricture was followed by considerable pain about the pharynx and gullet, at the upper margin of the sternum and between the shoulders. These symptoms yielded to a blister and calomel and opium. In the evening the tube was passed. The power of deglutition again improved. The patient improved in flesh and strength, and was made out-patient, June 30, but neglected to attend. On July 18th, she was re-admitted, with aggravated symptoms. Pain referred to sternum and between shoulders. Blistering afforded relief. A tube of the size of a No. 8 catheter was passed daily, and she recovered the power of swallowing fluid nourishment. The state of the stricture would not, however, admit of any increase in the size of the œsophageal bougie. At the end of August, she was again made out-patient, and during the latter months of the year was employed as a nurse in the hospital. During this period, she was not able to swallow solids. She left in January. On the 10th September, 1849, she was admitted for the fourth time. Her symptoms and sufferings had assumed a more aggravated character than on any former occasion. For some weeks previously, the difficulty of swallowing had rapidly increased, and within the last few days everything she attempted to swallow was returned. The bougie met with some trifling obstruction at the upper third of the gullet, just below the cricoid cartilage, which moderate pressure succeeded in passing, but, on reaching the stricture below this it could not be passed by the smallest-sized wax bougies. A variety of remedial means was tried, but without procuring

any permanent relief of the patient's sufferings. The stricture was situated so low in the œsophagus that all hope from surgical assistance was unavailing. Incoherency and delirium supervened, and death from exhaustion and inanition put a period to the patient's sufferings on the 19th September, 1849.

"On opening the œsophagus after death, the pharyngeal or upper third of the tube was much dilated and pouch-like; the mucous surface being puckered up into folds. The coats of the tube in its entire length were much thickened, the mucous and muscular coats particularly, above the first stricture. At a spot corresponding in position to about an inch below the cricoid cartilage, was the first structure; just below this, on the left hand, was the cicatrix of an ulcer about the size of a sixpence. The tube dilated again, and then contracted to about the diameter of a No. 8 catheter for nearly three inches, when it suddenly closed, and presented the appearance of complete obliteration of the canal; and a probe could not be passed from above downwards; a passage could be obtained only by passing the probe from below upwards.

"The thickening of the walls of the gullet commenced just above the first stricture, and continued to the lower one, below which the œsophagus resumed its ordinary character.

"This case," Dr. B. remarks, "affords an example of the succession of structural changes, slowly developed, and proceeding for a time without any very urgent symptoms, which may be expected to follow accidental swallowing of the caustic and carbonated alkalis. The same order of symptoms and similar pathological conditions of the œsophagus have been observed before, and seem common to all these cases. Inflammation is first excited; an impediment to perfect and easy deglutition is accompanied by pains and distress at the inflamed portion of the gullet. This inflammation is constantly renewed and maintained. Stricture follows; difficulty of deglutition results; increased obstruction perpetuates the inflammatory condition, surrounding textures become thickened; the stricture continues to increase, and finally becomes impassable; and the miserable patient at last dies, less from the morbid process itself than by want of nourishment; or craving hunger and insatiable thirst continuing unrelieved, and these, mocked by the ineffectual efforts for their relief, consign the poor sufferer to incoherency and delirium, and death ensues."

After referring to three analogous cases, recorded by Sir Charles Bell, Mr. Cummin, and Mr. Dewar, Dr. B. remarks:—

"The practical question, in considering these cases, is whether any other mode of treatment than that adopted could be expected to avert these distressing and fatal consequences, which appear almost uniformly to follow these accidents of swallowing the caustic and carbonated alkalis. The propriety of treating these cases, in the first instance, for inflammation of the gullet, cannot, I think, be questioned; and leeching, blistering, and calomel and opium, when deglutition can be accomplished, are successful in relieving the earlier morbid conditions. But so soon as these are controlled, and before any positive symptoms of dysphagia present themselves, I should in any future case commence at once the daily use of an œsophageal bougie, and continue its daily employment for months, even in the absence of any symptoms of its necessity."

The eighth paper is "*On the Proximate Cause of Albuminous Urine and Dropsy, and on the Pathology of the Renal Blood-vessels in Bright's Diseases*," by Dr. George Johnson.

We cannot attempt to analyze this able and interesting paper. The following paragraphs will convey to our readers some idea of the view which Dr. Johnson has attempted to establish in reference to the pathology of the diseases of which he treats.

"In tracing the progress of a case of acute dropsy occurring as a consequence of scarlatina, it will commonly, but not invariably, be found that the patient has been exposed to cold. The natural process of elimination by the skin has thus been checked, and the poison is driven inwards to the kidney. It reaches

the inter-tubular capillary plexus, and an effort is made to eliminate it by that modified action of the secreting cells which we have called desquamation. The cells are formed and shed rapidly and in large numbers; so that in the course of a few hours many of the tubes may be completely filled by their accumulated solid contents. This condition of the tubes must obviously impede the secretory process; the blood is imperfectly purified, and excrementitious matters accumulate in it."

"Assuming that the renal circulation is affected by an imperfect elimination of the urinary constituents in a manner analogous to that in which the pulmonary circulation is influenced by the retention of carbonic acid in the blood, we should expect to find that the circulation would first be retarded in the inter-tubular capillary vessels, the obstruction, which will be in proportion to the extent of morbid change in the contiguous tubes and cells, will, of course, exert an influence extending backwards in the order of the circulation; so that the Malpighian capillaries and the arteries which supply them will become gorged with blood. This engorgement is exactly analogous to that of the right side of the heart and venous system observed in animals after death from asphyxia."

"That the circulation through the inter-tubular capillaries is retarded, and that the Malpighian capillaries are consequently subjected to a greatly increased pressure and distension, seems to be indicated by the escape of serum and blood which so constantly occurs during an attack of acute desquamative nephritis following scarlet fever. The serum flows into the tubes, mingles with the urine, and renders it highly albuminous; while the colouring matter and fibrine coagulate in the tubes, and afterwards escape in the form of cylindrical moulds, in which epithelial cells are commonly entangled. There seems no reason to doubt that the blood in these cases escapes from the Malpighian capillaries, which lie within the dilated extremities of the tubes. The result is precisely similar to that obtained artificially by Dr. George Robinson, who observed that when a ligature was placed upon the renal vein of a rabbit, the urine became albuminous and bloody.

"I have observed in all cases of chronic renal disease, which I have examined since my attention has been directed to the condition of the blood-vessels, that the coats of the arteries and of the Malpighian capillaries are remarkably hypertrophied, while the coats of the inter-tubular capillaries and of the emulgent vein present no appearances of hypertrophy or thickening."

"The pathological explanation of the changes in the renal blood-vessels appears to be this. There is an imperfect elimination of the urinary constituents, in consequence of changes in the secreting cells, produced by an effort which they have made to excrete abnormal products. Deficient excretion at once leads to impeded circulation—the obstruction occurring at the very point where the excretion should be effected, viz., in the inter-tubular capillaries. The impediment reacts backwards upon the Malpighian capillaries, which in a sudden acute attack become ruptured, and allow the blood to escape into the urinary tubes; but when the disease has been of longer duration, they become thickened, and permit only the serum of the blood to escape. The thickening of the Malpighian capillaries is probably preservative, and is intended to enable them to bear the increased pressure to which they are subjected during the continuance of the disease.

"The thickening of the arteries, which proceeds simultaneously with that of the Malpighian capillaries, affords support to the opinion entertained by some physiologists, that the smaller arteries exert a propulsive influence upon the blood. The remarkable hypertrophy of the muscular coats of these vessels seems to have for its object to assist in driving the blood onwards through the inter-tubular vessels in which the impediment exists. Finally, the gland cells being destroyed, and the process of secretion arrested, the circulation ceases, the tubular tissue wastes, and oil globules collect in the canals of the blood-vessels."

"The subject of renal dropsy appears now to demand a brief notice. Analogy would indicate the very great probability that this form of dropsy is produced by an impeded circulation through the systemic capillaries, consequent

upon the retention of the urinary constituents, 'the blood.' "There is one fact which, *per se*, is almost sufficient proof that the systemic capillary circulation is actually impeded, in the way supposed, as a consequence of imperfect elimination of the urinary constituents. I allude to the frequent occurrence of hypertrophy of the left ventricle of the heart in cases of chronic renal dropsy, when there exists no obvious disease of the valves or vessels to account for such hypertrophy. The very frequent concurrence of cardiac and renal disease was long since pointed out by Dr. Bright."

"The frequent connection of cerebral hemorrhage with renal disease is another fact closely related to those already mentioned, as also the occurrence of what is sometimes called serous apoplexy. Both these phenomena are, in all probability, associated with impeded circulation through the cerebral capillaries."

The ensuing paper is "*On Fatty Diseases of the Heart*," by Dr. Richard Quain. Of this long and elaborate paper, it would be impossible to present anything like a satisfactory analysis, without extending our notice of the volume before us to a very unreasonable length. The subject is considered under the following heads—

"I. The varieties of Fatty Diseases of the Heart, and their respective characters.

"II. An account of preceding observations on these diseases.

"III. A consideration of the circumstances under which they occur—their causes.

"IV. Their Effects on the Structure and Functions of the Heart.

"V. Their Symptoms and Diagnosis.

"VI. The indications for their treatment."

Next in order we have the account of "*A case of gunshot wound, and subsequent extraction of a bullet from the bladder*," by Mr. E. M. Macpherson, with a notice in tabular form of similar cases by Mr. James Dixon.

A soldier in battle was shot in the left buttock, about the situation of the ischiatic notch, but he immediately felt such severe pain in the left testicle as made him at first suppose that part to be the seat of injury. The wound healed without difficulty, and no blood was ever detected in the stools or urine. Shortly after the infliction of the wound, a discharge from the urethra occurred with some pain in passing water. The discharge continuing, and much ropy mucus being secreted, the presence of a foreign body in the bladder was suspected, and upon the introduction of the sound found to be the case. The lateral operation was performed, upwards of six months subsequent to the receipt of the wound, and an iron ball was extracted from the bladder, weighing 1 oz. 33 grs.: it had become incrustated with a very thin layer of sandy deposit. By the end of October, two months after the operation, the patient was convalescent.

An interesting case is next related "*of scrofulous abscess of the anterior mediastinum, communicating with both sides of the chest, the pericardium, and trachea, forming a tumour above the clavicle, and simulating aneurism of the innominata artery or arch of the aorta*," by Daniel MacLachlan, M. D.

The patient was 61 years of age—when admitted into the Chelsea Infirmary, January 5th, 1849, complained of great difficulty of breathing, general debility, and constant pain in the back of the head, right shoulder and arm.

"Immediately above the sternal end of the right clavicle, and dipping underneath this bone, there was a slightly movable, somewhat flattened tumour, of the size of a tennis-ball, divided through the centre by a superficial sulcus, the integuments covering the inner half of which were slightly reddened. At this place a knuckle-like projection existed. The tumour was tense and elastic, except where it seemed to point; here an obscure feeling of fluctuation was perceived."

tible; it was free from pain, and neither bruit nor pulsation could be detected in it."

The right carotid beat feebly—the pulse at the temple and wrist scarcely discernible; deglutition difficult—voice husky—spoke in a whisper—respiration always impeded, occasionally asthmatic—patient could not lie down—was incessantly harassed by a teasing dry cough. The face and scalp congested—external jugulars and cutaneous veins prominent—lips livid. There was almost constant pain in the back of head and right shoulder, with pain and numbness extending down to ring and middle fingers of right arm. Arm not oedematous. A swelling, supposed to be an enlarged gland, below the angle of the lower jaw on right side. General health greatly impaired—great emaciation—pulse weak and rapid.

Whole right side of chest, anteriorly and posteriorly, dull on percussion. Sternum universally elicited a dull sound. Some fullness in the right infra-clavian region. Intercoastal spaces not prominent nor different from those of left side, but the costal movements were absent on the right side, but unusually vigorous on the left. Respiration clear and puerile over the whole left side of the chest, with the exception of the præcordial region. It was entirely absent in the right side anteriorly. Along the spine, and at the base of scapula on this side, a feeble respiratory murmur, with occasional mucus râles—vocal and tussive fremitus absent. The hand applied to both sides of the chest discovered moderate vibration on left side, but none on right. Altogether, the physical signs indicated extensive effusion into right cavity of chest, and yet there were circumstances rendering a positive declaration of this hazardous.

The præcordial region extensively dull on percussion—no perceptible impulse of heart—at no period were its sounds audible, however carefully the patient was examined. Latterly, the erect posture or any sudden muscular effort occasioned faintness. The pulse, frequent and compressible, was almost imperceptible in the radial and temporal arteries of right side.

Without change in the physical signs, about three weeks after admission, rather suddenly, the respiration became more embarrassed, and the asthmatic paroxysms more frequent and severe. The difficulty of swallowing also increased. The voice now almost indistinct, cough still nearly dry, with occasionally a mixture of florid blood in the very scant catarrhal expectorations, and about ten days before death the sputa were purulent but still scanty. The tumour remained nearly stationary. January 28th, some fulness perceived along the lower part of the right side of neck, extending backwards towards the vertebræ, without any sense of fluctuation. Neither in this swelling nor in the circumscribed tumour was there ever any impulse communicated on coughing. January 30th, a needle was introduced into the most prominent part of tumour, and pus being discovered, a small opening was made, when nearly three ounces of curdy sero-purulent matter escaped, the walls of the abscess collapsing, and the tumefaction towards the spine partially subsiding.

"From this date, the patient gradually sank—on the day after the operation his breathing was more free. Each fit of coughing was now accompanied with a jet or gush of sero-purulent fluid from the opening, and the quantity discharged during the day in this manner was very considerable. The exhaustion prevented a satisfactory physical exploration. On the 2d February, the right side of the chest, from the clavicle down to the nipple, had gained its lost sonority in a remarkable degree, and the respiration in the apex of this lung was now puerile. The dullness and absence of the respiratory murmur lower down remained as heretofore. Posteriorly the chest was not examined. No change was perceived in the sternum nor in the region of the heart. The respiration

in the left lung had diminished in intensity, acquiring, with the partial relief to the right lung, a more normal character. Death happened on the 7th of the month."

The previous history of this case as given by the patient is vague and unsatisfactory.

The appearances discovered upon a post-mortem examination were enormous thickening of anterior mediastinum—the free surface highly vascular; between its laminae, in the substance of a diseased mass of hypertrophied cellular and adipose membrane, there was an almost empty abscess, capable of holding a billiard-ball. This communicated by several fistulous openings with the right side of the chest, and with the pericardium by a very distinct ulcerated perforation, admitting the little finger, situated near the right auricle. It also communicated, by one or two openings, with the tumour or abscess in the neck. The internal surface of the trachea was highly vascular, as was the mucous membrane lining the first divisions of the bronchi. Midway between the larynx and bifurcation of the trachea, on the anterior and internal aspect, three or four warty granulations, of the size of a split-pea, were observed, apparently the terminations of fistulous openings, through the lowermost of which a common probe could be passed into the diseased mass. Larynx perfectly healthy. The innominate, and a considerable portion of the subclavian, were imbedded in the indurated structures. The sternum, vertebrae, and clavicle sound. The right pleural sac contained several pints of curdy, sero-purulent fluid. The right lung was pressed against the spine, sodden and splenified. Its pleural covering, and that lining the ribs, perhaps, paler than usual, certainly free from any sign of recent inflammation. About a pint of a similar fluid in left pleural sac. The pleurae pulmonis et costalis healthy. Both lungs studded with miliary tubercles. The pericardium contained about eight ounces of pus, of the same nature as that in the abscess and pleural cavities. This sac otherwise free from disease. The heart sodden but healthy. The viscera of abdomen normal. As suspected, the submaxillary swelling was an enlarged scrofulous gland.

The twelfth paper is the history of a "*Case of Mollities and Fragilitas of Ossium, accompanied with urine strongly charged with animal matter,*" by William MacIntyre, M. D.

This is a highly interesting case—and not less interesting are the remarks appended to it, in reference to the pathology of the somewhat rare disease under which the patient laboured. We can spare room only for the following extract:—

"From the foregoing details, it will be seen that, although this case was stamped with characters of the most striking and aggravated kind, its real nature remained unknown to the last. The affection to which it bore the nearest resemblance, was a severe attack of lumbago or sciatica; but it was evident, from more than one feature of the complaint, that sufferings so intense must have a deeper seat and more formidable cause than mere muscular or neuralgic rheumatism. In particular, it was ascertained that the patient had lately lost strength and wasted rapidly, although his appetite continued keen, and he was consuming a much greater amount of solid animal food than he had ever been in the habit of taking when in perfect health.

"The discovery of albuminous matter in the urine naturally suggested the existence of Bright's disease; but that supposition was abandoned, on a closer consideration of the character of the symptoms, and the peculiar condition of the renal excretion. The leading symptoms were not such as usually accompany that affection. Atrocious pains, like those which assailed our patient, constitute no part of Bright's disease, while two of its constant attendants, dropsy and cerebral disturbance, were absent. The presence in the urine of an

animal principle alien to it in a normal state, might, it was at one time supposed, be attributable to erroneous vital chemistry, involving a perversion of the primary or secondary assimilating processes. This explanation was, however, deemed far from adequate, for, admitting the probability of these functions being in fault, the question as to what particular organ was affected, and what the special lesion that could give rise to a pathological condition so very anomalous, remained unanswered, and the case closed amid the uncertainty and doubt which had surrounded it from the beginning. But the information denied to the most anxious inquirers, prompted alike by the obscurity of the complaint and sympathy with the sufferer, was yielded to the first touch of the anatomist's knife. The crumbling ribs proclaimed the presence of a disease of the osseous system, and more remarkable for its phenomena than terrible in its effects."

As the dissection proceeded, a similar disorganization of bony structure was detected in other portions of the body, which had, during life, been the seat of suffering. With the lumbar vertebræ disappeared the characters of active disease and disorganization.

"The sacrum and flat bones of the pelvis were unyielding and impenetrable by the knife, but in colour they exhibited, it was thought, an unnaturally gray tint. Beyond this, the examination was not prosecuted, as the cylindrical bones of the extremities were found to resist all efforts to break them by manual force."

The thirteenth paper is the history of a "*Case of very large Hæmatocœle of the Spermatic Cord, proving fatal after ten years,*" by Mr. William Bowman; to which is added a "*Case of very large Hæmatocœle of the Tunica Vaginalis, in an old man, terminating fatally,*" by Mr. Thomas Blizard Curling.

The first of these cases occurred in a farmer, nearly sixty years old, and of good constitution. About ten years before his death he had been thrown from his horse against some railings, receiving a blow, probably on the right groin, where a swelling immediately appeared—confined to the inguinal canal and resembling a hernia. It was not, however, reducible—had no impulse from coughing—there was ecchymosis and no symptoms of strangulation. It was as large as a hen's egg, oval, elongated in the direction of Poupart's ligament; firm but elastic. Under simple treatment the pain and ecchymosis gradually subsided, and the tumours gave the patient no particular uneasiness. For seven years it underwent little change save a slow enlargement in size, but became at the end of that time, during exertion in walking, suddenly larger and heavier. This increase was found to depend on a vast effusion of blood, not merely about the canal, but into the tissues of the scrotum. After the disappearance of the ecchymosis, the tumour manifested no disposition to recede, rather to augment in size, and the surface of the scrotum began to exhibit large distended veins meandering across it. There was fluctuation, and a trocar was cautiously introduced by the surgeon who was now called in; a free gush of blood followed. The wound kindly healed. It was subsequently again punctured, with the same result, by another surgeon. Now, however, a tympanitic sound was perceived on percussion over the upper third or two-fifths of it; on shaking the tumour, a sound like that produced by agitating a thick fluid in a vessel containing air. This is heard as well as felt.

Towards the close of the tenth year after the accident, the dimensions and weight of the tumour were enormous.

The patient had long been confined to his bed from sheer inability to drag so great a substance about with him, and he was now also much reduced in

strength, and had a worn and haggard countenance. He had been lying habitually on his back, with the tumour resting on the right thigh, and it had become moulded by constant pressure to the shape of that part. It reached to the patella, had an oval shape, and was so heavy that it required two hands and no slight effort to raise it from its bed. Its neck ran up into the inguinal region. Its surface was crossed by many very large veins, several as large as writing-quills, which occupied deep grooves that might be felt in the hardened tissues of the dartos. The majority of these vessels took a nearly transverse course over the tumour, about an inch apart, and in somewhat regular parallel lines. The skin was dark-coloured and congested, and presented the cicatrices of the two punctures which had been made into it. At the seat of the more recent one, and also in another spot, there might be felt, through the skin, an opening or deficiency in the wall of the dense and apparently membranous investment of the tumour, circular in form, larger than a crown piece, feeling like holes punched out of a piece of parchment. In most parts, the feel of the tumour was that of a dense, solid mass; but in some parts there was a doubtful sense of fluctuation. The right testicle, with the epididymis, was at the very lowest extremity of the tumour most distant from the abdominal ring, and rested on the knee-joint. It appeared large from congestion, but slipped about naturally, forming no part of the diseased mass. Percussion gave a tympanitic sound over the more elevated portions of the tumour, and on shaking it the sound of air and fluid mingling was very audible. This, with the low irritative fever under which the patient laboured, rendered it probable that since the second puncture the contents of the sac had fallen into a state of decomposition, and in order to afford vent to the gas and other putrid matters, a trocar was thrust in between some of the large venous channels, at a spot where the covering was thinnest. Much fetid gas, and some dark-brown blood, of the consistence of treacle, evidently putrid, at once escaped. As no hemorrhage occurred to interrupt this proceeding, the opening was enlarged to an extent of three inches, by which an issue was allowed to a large quantity of the same kind of blood, mixed with large masses of old coagulum, not unlike that found in aneurismal sacs, altogether nearly filling two large wash-hand basins.

"It now became evident," says Mr. B., "that the tumour was an immense sac, situated in the course of the spermatic cord, and filled with blood, and that it had arrived at that stage when the only hope for the patient was in the complete evacuation of its contents. As for a summary removal of the entire tumour, the proposal could not be entertained. The reduced and almost typhoid condition of the patient, the extent of the scrotal covering, and especially the extraordinary size and number of the veins imbedded in the walls of the sac, and the firm and universal adhesion of the sac to the skin, quite precluded it. We, therefore, contented ourselves with making a counter-opening at the lower part for the further drain of the contents. After all this had been done, so firm and solid was the wall of the cavity that it collapsed but little, and large masses of coagula of various degrees of solidity remained within it, adhering to its inner surface. A poultice was then applied."

The patient now commenced rapidly to sink, and, at the end of a few days, died.

The case of Mr. Curling occurred in a male, aged seventy-nine. The patient had laboured for many years under a scrotal tumour, which had, within two days before Mr. C. saw him, increased considerably in size, and become painful. The swelling was now larger than the patient's head, extending half way down the thighs. When balanced in the hands it weighed heavy. It had an elastic feel, received no impulse on coughing, and was quite opaque.

Its upper boundary, which reached as high as the left abdominal ring, was not well defined. The testicle on this side was not perceptible. The integuments were red and œdematous, and the part was tender when handled. The patient could not pass his water, and the penis was so completely imbedded in the tumour that it was impossible to reach it at the navel-like orifice in order to pass a catheter. An incision was made gradually down to the sac, on opening which upwards of three pints of dark grumous blood gushed out, on the surface of which floated numerous particles of cholesterine. On enlarging the opening, and passing the finger to the bottom of the sac, several rounded bodies, larger than marbles, were felt. Their nature could not be made out, and they were not disturbed. The thickened condition of the sac prevented its collapsing after the operation. The wound was closed, and a catheter introduced into the bladder, through which about twenty ounces of urine were discharged. One week after this the patient died. On examining the parts after death, the large sac was found to consist of a dilated tunica vaginalis, the testicle being situated, as usual, at the back part. The rounded lumps proved to be masses of coagula adherent to the sac.

The next paper is the history of "*A Case of Disarticulation of the Left Condyle of the Lower Jaw, with Excision of nearly the left half of the Bone, on account of a very large cartilaginous tumour growing from and occupying the site of all this part of the bone, save the condyle and neck,*" by William Beaumont, of Toronto, Canada.

The disease occurred in a boy seven years of age. The tumour of the face had been first observed for about three months; it was at first nearly the size of a nutmeg. At the end of two months it had acquired its largest size externally, but during the last month had grown inwards into the mouth, and backwards towards the pharynx. The patient is said to have received a blow on the left side of the jaw from a boy's fist, a few months before the tumour was first observed. When admitted into the hospital, the lad, besides exhibiting externally great distortion of the face, could not speak intelligibly; he had been unable to masticate for the two previous months, and swallowed, with great difficulty, only fluid or semifluid aliment. He was thin and pale, but otherwise his general health was good.

Ten weeks and a half after the operation, which appears to have been very skilfully performed, the wound had healed externally—the external cicatrix was a mere line—a cicatrix could be seen on the inside of the left cheek, near the anterior arch of the velum. The truncated jaw near the left cuspidatis, was soundly covered by an investment like mucous membrane. The patient could masticate a crust or piece of meat without difficulty—could swallow readily, and his articulation was only slightly affected, probably from his having so long been unable to articulate. His general health was good.

The fifteenth paper is "*On Excision of the Os Calcis, in incurable disease of that Bone, as a substitute for Amputation of the Foot, with a case,*" by William Bousfield Page, of Carlisle.

The case related by Mr. Page was one of carious disease of the os calcis, occurring in an unhealthy, ill-nourished, scrofulous boy, sixteen years old. The excision of the diseased bone was performed under the influence of chloroform. Fourteen weeks after the operation the boy was discharged. He could now bear considerable pressure on the heel without suffering—but was forbid the use of the foot, or to wear a shoe, for several months. At the end of six months he was perfectly well, but from want of a proper shoe he continued to use a crutch for some time longer. Sixteen months after the operation, the patient, when sitting, could extend the foot perfectly, and imper-

fectly when standing; but in walking, the spring of the foot is so nearly lost that he has a slight limping in his gait. He wears a boot in which a piece of cork supplies the place of the lost bone; he can walk, run, and jump with little impediment; in short, for all the uses of the foot, it is as serviceable to him as the other.

From the favourable result of this, and of other cases, in which the os calcis was excised in the New Castle Infirmary, Mr. Page urges the adoption of this operation in all cases in which disease of the os calcis exists without involving the other bones of the tarsus.

The sixteenth paper is the history of "*A Case of Stricture of the Rectum, wherein an artificial anus was successfully established in the left lumbar region,*" by J. Wilson Croker Pennell, M. B., of Rio de Janeiro.

The case occurred in a gentleman about fifty years of age. Had five years previously discovered the existence of stricture of the rectum. It was treated by bougies, and upon several occasions by free division of the stricture by the knife, but without more than temporary relief. To the finger the gut felt as hard as cartilage. It was found impossible to continue the use of instruments, either for the purpose of dilatation or for maintaining an open condition of the stricture after division, in consequence of the extreme suffering and constitutional irritation which ensued. Palliative treatment was resorted to. Ultimately, in consequence of violent and repeated straining at stool, the bowels ulcerated, and the fæces formed a false passage into the urethra and bladder; so that from this time nearly all the fæces passed through the penis. He had also a narrow stricture, in consequence of which, for eighteen years, it had been impossible to pass an instrument into the bladder. His sufferings now became greatly increased. Frequently the fæces were retained for days in the urethra; the bladder became daily filled with gas, producing a sensation as if it were about to burst. Inflammation and partial suppuration of the testicles took place, then inflammation of the liver and kidneys. Hectic fever came on every evening, so that the patient's system was at last evidently giving way under his protracted sufferings, and the accumulation of disease. Finally, as affording the only chance by which life could be prolonged, the operation of opening the descending colon, after the plan of Callesen, which Mr. P. prefers to that of Amussat, was decided upon and performed.

In a few days after the operation, the hectic fever ceased, and in two weeks the patient increased so much in strength and flesh, and was so completely relieved of his sufferings, as to be able to walk about with ease. At first, the urine passed entirely through the anus, but in three or four days it began to pass by the urethra, but mixed, at first, with a large quantity of pus, which gradually diminished. The urine, at times, passed by the bowel and escaped by the wound.

We are next presented with some remarks "*On the use of the Speculum in the Diagnosis and Treatment of Uterine Diseases,*" by Robert Lee, M. D. The object of this paper is to present concisely the results of the author's observations during the last twenty-three years, on the real value of the speculum in the diagnosis and treatment of uterine diseases.

Dr. Lee believes that in all the class of organic uterine diseases, comprehending fibrous, fibro-cystic, glandular, and all other tumours which are not malignant, little or no aid can be derived from the speculum in their diagnosis and treatment. He has derived no assistance whatever from the speculum in the diagnosis and treatment of any of the varieties of malignant disease of the uterus either in their early or in the advanced stages.

Dr. Lee repudiates the idea that ulceration of the os and cervix uteri is of such frequent occurrence as has been supposed by some recent advocates of the speculum.

"Never," he remarks, "in the living or in the dead body have I ever seen ulceration of the os and cervix uteri except of a *specific* character, and especially scrofulous and cancerous; but I have met with a very considerable number of cases in which it had been affirmed by others to exist during life after deliberate and repeated examination by them with the speculum, where I ascertained that ulceration did not exist in the os and cervix uteri, *nor disease of any kind*. This mistake has happened not once, and to one individual, but in a number of cases, and to several practitioners, who avow that they are 'in the daily, and almost hourly, use of the speculum.'"

"From the age of maturity to the middle period of life," he remarks, in another part of the paper, "the uterus is rarely, seldom at least, comparatively with advanced age, affected with organic disease of any kind. Amenorrhœa, hysteria, dysmenorrhœa, menorrhagia, leucorrhœa, and various nervous affections, local and constitutional, are those from which females chiefly suffer before the age of twenty-five or thirty. An examination of the physical condition of the uterus in unmarried females, either with or without the speculum, I have always refused to make, even when requested to do so, unless pain, severe and almost constant, in the region of the uterus existed, leucorrhœa or hemorrhage, which did not yield to treatment, and where the symptoms did not make me strongly suspect the presence of some displacement or organic disease. In unmarried women, whatever their rank or condition in life may be, the integrity of their structures should not be destroyed with the speculum, nor their modesty wounded by an examination of any kind without a necessity for such a proceeding being clearly shown. Even in married women who are barren, or who have had children, it is unjustifiable, on the grounds of propriety and morality, to institute an examination of any sort, unless the symptoms warrant the supposition that the uterus is displaced or is in a morbid condition, the nature of which cannot be determined by the symptoms alone. Numerous cases of leucorrhœa in young unmarried females, where rational, constitutional, and local treatment is adopted, perfectly recover where no examination is made.

"In cases of obstinate leucorrhœa, I have often employed the speculum in married women, after I had failed to detect the existence of disease by the ordinary mode of examination. In some of these cases, there has been seen an unusual degree of redness of the os uteri, sometimes affecting the whole, and at other times limited to the inner margin, with or without swelling. The white viscid discharge has been seen issuing from the os uteri. I have never seen ulceration of the orifice of the uterus in such a case, and the condition of the interior of the cervix I have never been able to demonstrate, either with the bivalve or any other speculum; nor do I believe that, in the ordinary condition of the os uteri, it is possible to see the inner surface of the cervix to any great extent by any means."

This paper is replete with important practical remarks.

The next paper is by the same author; it is a "*Supplement to a paper on Fibro-carcinoma Tumours and Polypi of the Uterus*," contained in vol. xix. of these Transactions.

Appended to this paper is the history of a case, in reference to which Dr. Lee remarks:—

"It has been stated by several recent writers that fibrous tumours of the uterus inflame and suppurate; but until the occurrence of this remarkable case of abscess in the centre of a fibrous tumour imbedded in the walls of the uterus, I had never seen an example of this morbid alteration of structure, nor met with any pathologist who had witnessed the phenomenon. If the fact has ever before been observed, I am not aware that it has been distinctly demonstrated, or its importance pointed out in the diagnosis and treatment of the disease."

Next follows the history of a "*Case of Fatal Poisoning by Sir William Burnet's fluid*," by H. Letheby, M. B.

The fluid alluded to is a strong solution of the chloride of zinc, prepared as a deodorizing and disinfecting agent. A portion of this a female infant, aged fifteen months, swallowed; she was immediately seized with violent sickness; an hour and a half subsequently she was found in a semi-comatose state; the vital powers much prostrated; countenance pale and anxious; breathing thoracic and rapid; pulse quick and fluttering; general surface of the body cold and bedewed with perspiration; lips swollen and much covered with a thick transparent mucus. The inner surface of lips and lining membrane of mouth presented an opaque white appearance, as if they had been acted upon by some caustic or corrosive substance. When roused from its lethargy, the child craved cold water, and retained it in its mouth with apparent satisfaction, but on attempting to swallow the water, the greater portion of it returned by the nostrils. The throat appeared somewhat swollen, and probably was painful, as the child frequently raised both hands to its neck. On attempting to administer to the patient a solution of albumen, from the swollen and constricted condition of the throat, little or none passed into the stomach. The albumen was coagulated by the fluid matters which still adhered to the mouth. There was occasional vomiting of a frothy fluid, like curds and whey, at which times the child was roused from its heavy drowsy state. Gradually the coma became deeper, the respiration slower, the pulse more feeble, the surface of the body colder, and in the evening, ten hours from the accident, the child died.

A post-mortem examination was made 22 hours after death. Body plump and well developed; face pale and somewhat swollen; a dark brown scab on the lower lip, the effect of the corrosive action of the poison; lining membrane of lips, mouth, fauces and œsophagus of an opaque white colour; lungs slightly congested; auricles of heart full of dark semi-fluid coagula; ventricles empty, outer surface of stomach presented a peculiar mottled appearance from ramifications of dark purple vessels; intestines paler than natural; stomach felt hard and leathery; contained $1\frac{1}{2}$ oz. of a fluid resembling curds and whey; its inner surface corrugated, opaque, and tinged of a dull leaden hue; this appearance stopped abruptly at the valve of the pylorus, from which point the rest of the alimentary canal had a natural appearance; the kidneys were greatly congested.

The 20th paper is the history of "*A Case in which the Urachus remained open, and a Ring-shaped Calculus, formed upon a hair in the bladder, was extracted through the Umbilicus*," by Thomas Paget.

The patient, 40 years of age, was found to be labouring under calculus of the bladder. During attempts to make water, and strong efforts at work, a portion of his urine was apt to escape at the navel, which was open. This, as far as he knew, had been the case from his birth. Mr. Paget found that the nose of a catheter was easily made to appear from the bladder at the umbilical opening. It was first proposed to distend the bladder to its utmost, with warm water, the umbilicus being tightly plugged, and the patient reclining upon Heurteloup's table, with his head lower than the pelvis, that upon removal of the plug the calculus might flow out with the water. It occurred, however, to Mr. P. to try first a finger at the umbilicus. It readily entered, and when at full length down the unnatural passage, caught within the circle of the calculus, so as to enable its being drawn along the side of the bladder and extracted. It was annular in form, and upon carefully truncating it the projecting extremity of the hair upon which it was formed, was readily seen.

"The phenomena connected with the opening at the umbilicus may be thus described. There is a circular deficiency in the linea alba an inch in diameter, its margin being thickened and of cartilaginous hardness. Through this protrudes a hernia of the size of a goose's egg, which in lieu of ordinary integument is covered by mucous membrane, the surface, however, becoming dry when exposed for any length of time. He never makes his water while the hernia is out: when called to an effort for that purpose, the first act of the bladder is gradually to draw into the abdomen the whole of the protruded substance; its first contractions have no other effect, and it seems not to have power to force the urethra until that is accomplished. At the latter part of the act, at the instant of the disappearance of the hernia, there occurs a rather forcible jet of urine from the opening. The flow by the urethra also commences at this juncture, and the bladder is emptied in the usual way, the jet from the umbilicus ceasing, not to be renewed except by a violent accelerating action of the expulsor muscles. He can retain a pint of urine.

"By watching the first contractions of the bladder, it becomes evident that to the thickened margin of the umbilical aperture are attached the muscular fibres of the bladder extended along the urachus; in fact, that the bladder and urachus are formed into a urinary receptacle, which in shape may be compared to a curved-necked cupping-glass, the urethra passing out at its lower end, and its mouth being attached by muscle to the circular aperture in the linea alba. It becomes evident, also, that the pouch of the hernia is formed by eversion of the posterior part of the neck only, which is of course attached to the upper half of the aperture, and when protruded presses upon the hard edge of the lower half sufficiently to prevent the escape of urine, except under straining efforts of the abdominal muscles. The hernia is generally out; and he wears a girdle with a thick pad of flannel to catch the jets of water which are apt to occur while he is at work.

"After the extraction of the calculus, the man was entirely relieved of his bladder symptoms."

The ensuing paper is the history of a "*Case of Ileus complicated by Hernia*," by Samuel Solly.

The patient was suddenly affected with inguinal hernia, attended with violent pain of the abdomen. The hernia not being reducible by taxis, the operation was performed. The pain in the abdomen still continued; to this were subsequently added frequent eructations and great nausea; obstinate costiveness; inability to pass his water; scarcely perceptible pulse; cold clammy skin; vomiting of a considerable quantity of a greenish bile, not feculent. On the day of his death, he passed wind and feculent matter per anum; the pain and vomiting ceased; but the system never rallied. He died thirty-two hours from the commencement of his symptoms.

The abdomen was examined the morning after his death. The internal and external rings were found quite free; and about a foot and a half of small intestine enormously distended, and nearly black, lying in the pelvis; when this was raised it was found to be girt by a band about $1\frac{1}{2}$ inch long, connected with the cœcum on the one side, and with the peritoneum covering the iliacus internus muscle, close to the internal abdominal ring, on the other. This band was round and firm, and seemed to be either one of those bands of old adhesive inflammation, occasionally met with in the abdomen, or the remains of the omphalo-mesenteric duct. It must have existed a long time. It was not so tight as to have strangulated the gut in its undistended state. Mr. S. has no doubt that this band was the cause of the previous obstinate constipation, and also of the subsequent irritation of the bowels, under which the patient had laboured, though this all subsided before the fatal strangulation took place.

Next follows the history of "*Two cases of absence of the thyroid body*," and

symmetrical swellings of fat tissue at the sides of the neck, connected with defective cerebral development," by Thomas Blizard Curling.

The first case occurred in an inmate of the Idiot Asylum at Highgate, and was supposed to be one of *cretinism*, in a female child, of stunted growth, 10 years of age. She measured 2 feet 6 in. in height. Her body was thick; her limbs disproportionately large and long; dorsal surface of body and limbs hairy; head heavy looking; forehead flat; fontanelles unclosed. The countenance had a marked and very unpleasant idiotic expression. The mouth large; tongue thick and protuberant. At the outer sides of neck, external to the sterno-cleido mastoid muscles, were two tolerably symmetrical swellings, having a soft, doughy inelastic feel. There were similar swellings, but smaller and less defined in front of the axilla. No enlargement in front of the neck; the thyroid gland could not be perceived. The child had very little power of locomotion but could walk from chair to chair, with a little assistance. She had no power of speech. She recognized her parents, and evinced some manifestations of the exercise of the will. Whilst in the institution she had a severe attack of erysipelas, after temporary recovery from which her mind seemed more developed. A considerable abscess formed in the thigh, which discharged copiously during many weeks. After this healed, erysipelas subsequently re-appeared, accompanied with glossitis and stomatitis, from which she died exhausted, six months after the commencement of her illness, and about 15 months after admission into the asylum. After death the swellings in the neck were much less in size than they had been prior to her illness. They were found to be composed of fat, and occupied the posterior triangle of either side of the neck, dipping downwards behind the clavicles, and filling the axillæ. They could be traced extending slightly over the infra-spinal muscles, and the lowest angle of the scapula. They were not enveloped in capsule, but consisted of fat of a loose lobular structure, which seemed, under the microscope, to be made up of connecting tissue and fat globules. There was not the slightest trace of a thyroid body.

The second case occurred in a female infant six months old. The child was plump, but had a marked idiotic expression, a small head with very receding forehead. Tongue large and protruding; on the sides of the neck, beyond the sterno-cleido mastoid muscles, were two soft symmetrical swellings, having a doughy feel, and incompressible. They were of an oval shape, lying obliquely across the sides of the neck, and extending from the edges of the trapezii muscles to the middle of the clavicles. The infant was said to be more helpless in her lower limbs than is usual in children of her age. The child died convulsed about one month after it was seen by Mr. Curling. On examination after death, nothing abnormal was observed in the brain, except a remarkably small development of the anterior lobes of the cerebrum. No trace of a thyroid gland could be discovered. The swellings in the neck were found to consist of superficial collections of fat tissue, without any investing envelope, and loosely connected to the surrounding parts.

"I am not," says Mr. C., "acquainted with any case on record in which a deficiency of the thyroid gland has been observed in the human body. But apart from the interest which must attach to the cases just related, from their great rarity, the development of adipose tissue forming symmetrical swellings in the neck cannot fail to add to their importance; for it is highly probable that this abnormal secretion of fat was dependent on the absence of those changes which result from the action of the thyroid, or on some imperfection in the assimilating processes, consequent on the want of this gland; and the facts here detected may not be without significance in directing the researches of future inquiries into the use of this body.

chocele prevail, it was long supposed that there was some connection between the defective condition of the brain, and the hypertrophy of the thyroid. Pathologists have recently been inclined to view the coincidence of these two affections as accidental, or as having no direct relation. In the foregoing cases, we have examples of a directly opposite condition, viz., a defective brain, or cretinism, combined with an entire absence of the thyroid, which may be regarded as tending to confirm the more modern opinion respecting the connection between cretinism and bronchocele."

The 23d paper is an "*Account of a case in which an Abscess formed in the Vesicula Seminalis, and proved fatal by perforation of the bladder, and extravasation of pus into the abdominal cavity,*" by Mitchell Henry. The case occurred in a sailor 20 years of age. He complained on admission of pain in the loins and hip joint, while his gait was that of a person labouring under morbus coxarius; upon examination, however, the hip joint was found to be free from active disease, and it was then supposed he might have disease of the kidney. The patient attributed his disease to a severe wetting to which he had been exposed six months before. Had never had gonorrhœa or any form of syphilis, and had usually no difficulty in urinating.

His symptoms are described as follows: Great tenderness and shooting pain in the left groin and hip, extending up the loin of that side, and much increased by any motion of the joint; acute febrile symptoms; a red tongue, great thirst, quick, small pulse; bowels moderately open; urine sp. gravity 1.029, thick and scanty, causing burning pain in its passage along the urethra. The urine on the second day was light in colour; and deposited a copious thick sediment, which proved to be almost entirely pus. On the fourth day he commenced to pass blood with his urine; the purulent deposit still continued. On the 10th day violent purging came on, preceded by pain and tenderness of the abdomen; next day he vomited everything; on the 13th day the discharges from bowels and the vomiting had ceased; the pulse small and frequent; extremities cold; abdomen still tender, and on the 15th day a cough set in; the abdomen became tympanitic; still very tender, and about the middle of the day the patient died in much agony, retaining his consciousness to the last.

After death the body was blanched and emaciated; nothing particular was observed in the cavities of the head or thorax. The abdominal cavity was filled with a great quantity of cream-coloured fluid pus, evidently from an abscess and not the product of peritonitis. Peritoneum in an early stage of inflammation; intestines slightly adherent; surfaces of liver and spleen covered with a layer of recent lymph. The liver, spleen, stomach and other abdominal organs quite healthy but pale. Kidneys and ureters free from disease. The bladder contained some pus, and was perforated by an ulcer as large as a sixpence. The hip joints, vertebræ, the urethra, testicles, prostate and neck of the bladder presented no marks of disease. At length the remains of a large abscess was discovered in the situation of the left vesicula seminalis, which was nearly destroyed by suppuration. The abscess had perforated the bladder, and discharged its contents into that viscus by a small rounded hole, just where the peritoneum is reflected from the sides of the bladder. The pus had, consequently, found its way into the abdominal cavity, and set up the fatal peritonitis.

"The formation of the abscess," says Mr. H., "must have been preceded by acute inflammation of the vesicula which occasioned the extreme pain which was so prominent a feature at the time of the patient's admission into the hospital, and the date of its bursting into the bladder is fixed by the passage of pus from it, mixed with the urine. The time, also, when this pus made its

way into the abdominal cavity cannot have been far removed from the attack of hemorrhage from the urethra, which took place twelve days before death."

Mr. H. refers to another case communicated to him by Mr. Cock, having a close resemblance with the above in its earliest stage, in which he thinks there is every probability that an abscess had formed in the vesicula seminalis, and in which a fatal event was probably prevented by the timely evacuation of the pus by incision through the rectum.

The following paper is a minute history from day to day of "*A case of Albuminous and Fatty Urine*," by Henry Bence Jones, M. D. The whole of the details in relation to this case are highly interesting, but do not admit of any satisfactory analysis. Dr. Jones remarks—

"Cases of so-called chylous urine are so rare that no extended investigation of the complaint has yet been made. Indeed, no very minute investigation of a single case has as yet been published. Some minute chemical details of the present case were communicated to the Royal Society, and the chemical investigation of the fatty matter found in the urine will be the subject of a paper of Dr. Hoffman. The more purely medical part, consisting of the microscopical examination of the urine, of the history of the case, of the effects of the different kinds of diet to which the patient was restricted, and of the different medicines he took, form the subject of the present communication. The records of the treatment are the more interesting as the disease proved to be under the control of medicine; the urine returned to a perfectly healthy state. The patient resumed his occupation after giving up work for nine and a half months, and after the complaint had existed fourteen and a half months at least."

The concluding paper of the present volume of Transactions comprises some valuable "*Observations on the Prolonged Expiratory Murmur as a sign of Incipient Phthisis*," by Theophilus Thompson, M. D. We can spare room only for the following extracts from this interesting communication. Its practical value can be fully appreciated only after a careful study of it throughout.

"No argument," remarks Dr. T., "is necessary to prove that the indications, by which we may hope to detect the commencement of tubercular disease in the lungs, demand our special investigation. The earliest signs which can be traced by auscultation are, probably, first, the modification of the inspiratory murmur, sometimes denominated jerking, in which the inspiration appears to be effected by a succession of waves; and, secondly, a modification of the expiratory murmur, consisting in an apparent prolongation, and an increase of coarseness. A careful analysis of the cases under my observation illustrating the first of these signs, namely, wavy inspiration (*Monthly Journ. of Med.*, June, 1849), has led me, for reasons formerly given, to conclude that although it may not be a decisive proof of the existence of tubercular disease, yet it probably indicates the presence in the lungs of some deposit of impaired vitality; and is, moreover, a sign of great interest and value, as affording evidence of a condition in which the supervention of phthisis, although happily not certain, is nevertheless too probable, and in which the most vigilant attention is required to avert, by suitable means, a further process of deterioration.

"The relation of the second sign, namely, prolonged expiratory murmur, to pulmonary consumption, is much more direct and significant."

Dr. T. agrees with Mr. Walshe, in considering the duration of the natural expiratory sound equal to about the fourth of that of the inspiratory; but in the cases investigated with the view to this communication, he has not recorded the expiratory murmur as abnormal, unless it were equal in duration to at least one-third of the inspiratory murmur. He believes that in health the expiratory murmur follows the inspiratory immediately without a pause. The expiratory murmur, as disease advances, may gradually increase until its

duration exceeds that of the inspiratory. In proportion to its prolongation it usually becomes increasingly coarse in quality, and at last decidedly bronchial. A change of character probably accompanies the prolongation from its commencement, but is at first too slight to be positively appreciated.

It has repeatedly occurred to Dr. T., when hereditary phthisis has manifested itself in a family, to be able, on examining the respiration of the surviving members, to prognosticate the approach of phthisis from the prolongation of the expiratory murmur alone, in the absence of any other perspicuous circumstance, either local or general.

"Where," he says, "the expiratory murmur is altered, in consequence of emphysema or bronchitis, the extensive diffusion of the sign, and the other concomitant circumstances, will usually suggest a correct interpretation; and if we are careful to separate these sources of fallacy, I cannot but believe that the sign under review will prove no useless refinement; but one well deserving of careful attention; being the most early, significant, and conclusive of the evidences of incipient phthisis. It is no valid objection that the detection of the symptom requires close attention, since the object is to trace the first appreciable inroads of an insidious disease.

"When the prolonged expiratory murmur is heard extensively, or on both sides, unassociated with bronchitis or emphysema, there is great reason to fear, not only that the disease is phthisical, but that it will make rapid progress. When the change of murmur is limited to a small portion of lung, and the general condition of the patient is favourable, the evidence of phthisical disease is fully as conclusive; but there is ground to hope that, by careful regulation of diet, by securing exercise in the open air, by promoting healthy nutrition, and administering suitable remedies, such as iodine, iron, solution of potash, and cod-liver oil, more decided mischief may for a time be averted. I have reason to think that, under such circumstances, some years may occasionally elapse before softening takes place; and I cannot but believe that when this particular sign under consideration is more generally sought for in suspicious cases of phthisical tendency, the average duration of pulmonary consumption, in persons possessing means to avail themselves of necessary comforts, will be found considerably to exceed the period commonly assumed."

D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XX.—*Renal Affections, their Diagnosis and Pathology.* By CHARLES FRICK, M. D., Philadelphia: Lea and Blanchard, 1850.

THE subjects of the above work are attracting increased attention from their important relations to various pathological conditions of the system, every alteration of the renal secretion from the normal condition indicating a corresponding functional disorder of one or more of the organs of the body or of the vital processes. Every addition to our knowledge is therefore to be hailed as affording material assistance in investigating morbid changes, and aiding in the diagnosis and treatment of affections of an obscure character.

In the work before us, the urine and its relations are separately considered in six chapters, comprising a large amount of information embraced in a moderate space, and treated in a manner indicating considerable familiarity and industrious examination. The first chapter is of a preliminary character, and relates to the proper collection of the specimens of urine to be subjected to observation, and of such superficial examinations as may be made at the bedside, and which will frequently decide whether further and more accurate investigations will be necessary. The second chapter includes a consideration of normal conditions, and the deviations therefrom, and an account of different chemical methods by which an excess of a normal or the presence of an abnormal product may be detected, the precautions necessary in practice and the comparative value of each; and, in an appendix to the chapter, a few observations on rarer ingredients and tests of a doubtful character. The microscopic examination takes up the third chapter, and contains several illustrations of the different substances observed, which have the merit of actual observation, being drawn from the author's own specimens and characteristic of the usual forms as they are presented to the eye of the observer. The pathological condition indicated by the appearances of the urinary secretions or the practical applications of the preceding observations are contained in chapters four and five. Uric acid and urica, phosphates, sugar, &c., have their various relations examined and the different views explanatory of their derivation and formation, freely noticed and compared. Views are given of the connections existing between urica and uric acid of practical importance, and the explanations sustained by a review of the phenomena which accompany the increase or diminution of either product. Uric acid is conceived to be derived from the perfect oxidation of uric acid in the system, and when from any cause the supply of oxygen is not sufficient, or if the proportion of ingesta is too great or require a greater amount of oxygen, then this deficiency is perceived by the uric acid making its appearance in the urine, the kidneys being the appropriate organs to throw off this excretion. The practical bearing of this theory is exhibited in gout and rheumatism explanatory on the one hand of the prophylactic agency of exercise and on the other of the injurious effect of rich (containing much fat) living and the use of alcoholic beverages, the former increasing the supply of oxygen and the latter increasing the proportion of the matters to be subjected to oxygenation; not, however, resting the production of the disease on chemical laws and agencies, but considering the nervous influence also to be imperfect in its action. The other deviations from the normal condition are similarly treated of, and, under oxalate of lime, views previously expressed by the author are again reproduced, in which the dumb-bells, are considered in some cases if not all to arise from decomposition of uric acid after excretion by the kidneys; but whether this decomposition results in the production of oxalic acid or is some intermediate stage in its formation, is not yet made out. The work concludes by directions in chapter the sixth for the examination of urinary calculi. The whole work we consider as

creditable to the author, and are gratified to find his attention so strongly directed to these investigations, in which a large field is opened for exploration, and which he will no doubt cultivate with advantage to himself and the profession.

R. B.

ART. XXI.—*The Diseases of the Breast, and their Treatment.* By JOHN BIRKETT, Assistant Surgeon at Guy's Hospital, &c. &c. London, 1850: pp. 264, 8vo.

THIS handsome and copiously illustrated volume embodies the essay to which the Jacksonian Prize for 1848 was awarded by the Council of the Royal College of Surgeons of England. The author has availed himself of all the appliances of modern science in investigating the subjects of which he treats, including chemistry and microscopy.

The subject proper of the volume is prefaced by a very good account of the anatomy of the mammary gland. From this survey of the healthy structure of the organ, the author infers that there are *three* periods during which its statical condition varies very much, with the different capacities and offices of the breast at these several periods, and that the same division may be made in studying its pathological history. Accordingly, he treats in separate portions of the book of, 1st. "The diseases occurring before puberty; 2d. The diseases during the establishment of puberty. 3d. The diseases after the establishment of puberty." The latter section comprises those affections of the organ happening during pregnancy, the puerperal period and lactation; and such as may occur at any period or age subsequent to puberty.

Before puberty, the gland in both sexes is in a rudimentary condition, possessing no special function, its life-acts being confined to those of ordinary nutrition. The diseases to which it is subject at this age are not, in general, *peculiar*, but are such as may affect any tissue. The author has, therefore, very little to say concerning them; his remarks, after enumerating the anatomical peculiarities of the organ at this early period of its development, are comprised in brief notices of the following cases: 1st. "Abscess of the breasts in an infant twenty-five days old, preceded by secretion of milk in both glands." 2d. "Tumefaction of the breasts of an infant upon the cessation of hemorrhage from the vulva." 3d. "Abscess involving the mamilla at the age of three months." 4th. "Swelling of the breast in a child sixteen months old."

In the second period, as above defined, morbid actions, though rather more frequent than in the first, are still rare, and usually of a very mild character. The novel sensations which are experienced at this time in the breast—of fulness or heat—slight tenderness on manipulation—occasional shooting pain—can scarcely be called morbid. They are incidental accompaniments to the increased nutrition of the gland, by which the true gland-tissue is developed, a tissue possessed of a higher character than it enjoyed before. Sometimes, however, inflammation affects this organ, and Mr. Birkett has seen "chronic abscess form during this period of development in a very strumous girl." He admits, also, that carcinomatous growths sometimes occur at this period. Besides these affections, the gland is liable to neuralgia, to hypertrophy, and to a precocious development.

The third period of female life is infinitely the most prolific in diseases of the breast, and it engrosses, consequently, the volume before us.

A few pages are devoted to the *anomalies in the number and situation of the breasts*. The author has met with "one case of congenital absence of one of the breasts, unaccompanied by other malformations;" and several instances are noticed in which absence of one or both of the mammae accompanied some other important organic deficiency—generally of the ovaries.

"*Pleiomazia*," or a redundancy of mammary glands, is more frequent. Mr. Birkett has collected fourteen reported cases. "In one of these, five mammary glands existed. Most of the supernumerary glands secreted milk, although the women did not in all cases allow their infants to suck them." He quotes at

length some cases of multiple mammæ, and gives the names of the reporters, together with a bibliography of reference.

The first disease of which the author treats is inflammation, and this is subdivided correspondingly with the different tissues of which the breast is composed. The author's remarks are judicious and interesting; but we do not observe anything in them which needs especial mention in a notice of this kind. The treatment which he particularly advises for inflammation of the gland consists in the free administration of *antimony* and saline purgatives, and in the application of leeches. By these means *resolution* may be induced. "But if called to a case in which suppuration appears inevitable—or, indeed, when there is reason to believe that pus has been formed, fomentations must be applied, and as soon as pus is detected by fluctuation a free opening should be made, and the contents allowed to escape. Pressure should not be used upon the part to expedite the flow of pus, but the opening ought to be sufficiently extensive to admit the ready efflux of the fluid, and perhaps somewhat solid contents. Lint, wetted with warm water, may be applied, and upon the second or third day—if the mamma be heavy, large, and pendulous—it must be strapped up with plaster, and well bandaged." We think that, in the foregoing, and also in the following paragraph, the author's views concerning the importance of supporting the breast are wise. "Most of the ill effects resulting from abscess—such as their consecutive formation and sinuses—occur for want of proper local support; and, therefore, in all cases in which the mischief appears to be deep, this plan should be adopted. Nor are poultices to be long continued, but only a small piece of wet lint is to be laid over the wound; even in the first stage of the attack, before there is any suppuration, strapping up the breast with plaster, and then bandaging it, prevents further mischief."

Several pages of this section are devoted to the subject of *chronic abscess*, with the hope of so defining the peculiar symptoms of this affection as to render it easily distinguished from "*new growths*." But we do not see that this end has been gained, before suppuration has become evident. And indeed we can scarcely expect to be so far enlightened as to be uniformly certain of this point, unless perhaps by puncturing the suspected tumor with an exploring needle, and submitting the escaping matters to a careful microscopical examination. This the author has not attempted.

The next subject of which Mr. Birkett treats is "diseases depending upon the development of cysts and intra-cystic growths." The chapter devoted to this is full, and evidently the result of much study.

Two classes of cysts are pointed out as being distinctively characterized. 1st. Those which depend upon dilatation and a morbid condition of the lactiferous ducts or acini. 2d. Those produced by a peculiar action in the fibro-cellular envelop of the gland tissue, the consequence of a morbid state of nutrition. "Each class of cysts presents fluid or solid contents, perfectly characteristic, and differing essentially in their nature and origin."

The first group may be represented in any part of the gland, near the nipple, in the substance of the gland, or on its posterior surface. The author finds that the cysts are lined by a delicate membrane continuous with that of the milk ducts, and presenting an identical microscopic character with it. "Their contents are of a mucous nature, of a pale yellow, reddish, or dull green tint. They exhibit a granular basis, fat globules, milk globules, and colostrum corpuscles, with epithelium. The color probably depends upon decomposition, or the presence of hæmatin." Sometimes the contained matters are fluid, sometimes more solid; this latter condition, the author explains by the fact that in such instances the ducts are obstructed, or are entirely imperforate, so that the fluid matter has been absorbed, leaving the solid part of the contents only. Again, it happens occasionally that this solid residuum has been the exciting cause of inflammatory action, or at least of a modified action of some kind, whereby plastic matter is effused upon the walls of the cyst so as to attach to them, more or less firmly, the solid matters which they surround; this occurs, generally, at the points where the ducts branch. The size of these cysts varies—being, as is to be expected, largest when situated in those parts of the gland where the ducts are largest. The author explains their formation very satisfactorily: An

obstruction has occurred in the course of one of the milk ducts, giving rise, in consequence of the continued secretion within it, and perhaps also of a modified nutrition of the duct itself, to dilatations of the tube at different points; in the progress of the affection, the duct contracts at the intermediate points, leaving isolated sacs, which may be entirely cut off from all inter-communication by the entire obliteration of the intermediate channel.

He finds these cysts co-existing with almost all the forms of the other diseases to which the breast is liable—simple and malignant.

The second class spoken of by the author consists of true cysts, formed within the areolar tissue uniting the different lobes of the gland. Their contents are either fluid or solid, or both. Their formation is thus accounted for: The areolar tissue contains a certain appreciable amount of fluid in its meshes, as a natural condition; through some modification of nutrition, the quantity of this fluid has become increased, so as to constitute finally a tumour of notable size; and at the same time, the walls of the cyst thus generated become more or less developed and indurated. "The epithelium lining these cysts is peculiar. It presents a very beautiful appearance; each scale is of a hexagonal figure, more or less perfect upon its sides, and contains a single central nucleus. So marked is this epithelium that I have never failed to discover its presence, even in old and long-preserved preparations, of which I could make fresh sections. It is a characteristic mark of this form of cyst, and isolates it at once from all cystoid formations which may be found in the breast."

The fluid contained in the cyst is of two kinds, as found by Mr. Birkett—one limpid and opalescent, containing no albumen, the other tenacious, slimy, opaque, and variously tinted, though usually of a pale amber colour, and containing a large amount of albumen. In point of size they vary very much, sometimes attaining exceedingly large dimensions; they occur singly or in numbers, and at all parts of the gland.

But in addition to the fluid contents, and sometimes in exclusion of this, the cysts enclose a *solid growth*, springing from the cyst-wall, and yet always more or less connected with the gland tissue, having an *eccentric* development as regards the gland, and covered with the epithelial layer before described. These growths sometimes attain a very great size. They possess a vitality of their own; nutritious plasma is furnished to them; and yet, though in a measure independent of the influence controlling the healthy organism, they adhere somewhat to the type of the gland itself, the newly organized matter being deposited so as to simulate the lobulated structure of the gland—p. 79.

The author pays minute attention to this subject, and is careful to classify his observations according to facts. His remarks are comprised in several subsections, each devoted to a particular variety of the cystic formation, as it occurs single or multiple, with fluid or solid contents, or both combined.

We cannot follow him through these subdivisions, although they are evidently based upon observations of nature, and are important with reference to the treatment of the diseased condition. All the concomitant circumstances are carefully pointed out, and as complete a history, special and general, of each variety is given as is usually to be gained.

The subject of *hypertrophy* is very fully discussed. The author arranges his observations under the following heads: hypertrophy occurring at puberty; true hypertrophy in the adult; tumours composed of imperfectly developed gland-tissue, or lobular imperfect hypertrophy; the painful tumour of the breast, a mere variety of the preceding; and general imperfect hypertrophy. Thus an important step is taken towards a more correct classification of the enlargements of the mammary gland, and a clear insight is had of their true pathology. This chapter may be perused with pleasure.

The "*hemorrhagic diseases of the breast*" are briefly noticed, under the division of "*ecchymoses in the sub-cuticular tissue, traumatic, and idiocratical; blood discharged from the nipple whilst suckling; blood effused into the interlobular cellular tissue, and containing coagula; and hemorrhages depending upon morbid growths.*" The most interesting point here is the development of tumours composed of fibre or areolar tissue, the fibres so arranged as to form a reticulated structure or an assemblage of cells communicating with large

veins, or, in other words, an erectile growth. Mr. Birkett considers them as essentially *new structures*, and not simply modifications of normal tissue. Though not unfrequent, perhaps, in the skin, and the tissues immediately beneath, he has met with only two recorded instances of their development in the gland itself, probably in the inter-lobular areolar tissue.

"*Hypertrophy of the adipose tissue and steatoma*" is next spoken of. Then follows the subject of diseases of innervation. He uses the word *mazodynia*, to signify "a painful state of the mammary gland;" and the conditions of the breast thus characterized he divides into those which are unaccompanied by *induration* of the gland, either with or without temporary enlargement; and such as are attended with induration, general or partial, and often, but not always, temporary. We see nothing here which is particularly noteworthy.

Next in succession we find *Atrophy* of the breast treated of—including a recital of several cases in which the modification of nutrition seemed due to the external and internal employment of iodine. Several diseases which seem to have some connection with atrophy, inasmuch as we generally find that this condition is associated with a *degradation* as well as a diminution of nutrition, are introduced in this part of the volume.

Sudden variations in the size of the mammary gland seem to be not rare. This phenomenon is generally due to derangement of the menstrual function, occasioned by some indiscretion on the part of the female. But the author quotes a case occurring under the notice of one of the French military surgeons, in Algiers, in which the sudden engorgement of the breast was induced by a chill of intermittent fever; this occurred repeatedly, and was always removed by the administration of quinine. A similar phenomenon is very commonly witnessed in the liver and spleen, but we never before heard of its occurrence in the breast.

Passing over many pages devoted to the modifications of the function of the gland, we come to the subject of *Cancer*.

We may observe, however, that the *order of succession* chosen by the author for the exposition of the diseases of which he writes seems to us to be a little irregular. His aim evidently is to *simplify* and *rationalize* the study of the affections of the breast; and he would have done better, we think, had he preserved a more uninterrupted order of sequence and association among all the diseases which depend upon the *same morbid process*, or upon some aberration or modification of *the same vital actions*. However, we are not disposed to criticise minutely for this mere difference of opinion concerning a point which does not involve truth, and with regard to which an author must be allowed to consult his own convenience.

Mr. Birkett does not pretend to give a full and complete history of *Cancer*. He details very well indeed the general and local evidences of the existence of a carcinomatous growth in the breast, of the variety termed "*carcinoma fibrosum*," and indicates the treatment which he thinks is most appropriate to this as well as to the other forms of cancer, in each stage of its development. He also gives briefly his views concerning its anatomy, mode of development, progress and termination.

We do not see that he has added any fact to the amount of our previous knowledge concerning this subject, with reference either to its pathology or its therapeutics. Nevertheless, as his views are those of a careful and honest observer, they should be respected, and be allowed their due weight in the scale of analysis and comparison with those of other investigators.

M. Birkett asserts very boldly and unconditionally the specific anatomical characters of Cancer and the possibility of its identification. He says, "The appearances observed in carcinomatous growths in the mamma are so variable, depending upon so many accidental circumstances, that it scarcely amounts to exaggeration to say that we rarely meet with two precisely alike. Nevertheless, they all present more or less general and characteristic features." Again, "The elements of which this structure is composed are so characteristic, that the identification of a growth of this nature no longer remains a matter of uncertainty or of doubt." He thinks that "the essential elements of carcinoma are nucleated globules and a fibre," the varieties of cancer—the *carcinoma fibrosum*, *medullare*,

colloideum—are due to the different proportions in which these two elements exist in the morbid structure—the greater the predominance of the fibre the harder the cancerous mass. In tumours of this class, two kinds are met with—one in which the minute bodies, “*nuclei*, predominate,” the other in which the “nucleated globules or cells” seem to constitute the chief material between the fibres. The *carcinoma fibrosum* presents a large quantity of fibre-tissue with a preponderance of nucleated globules; the *carcinoma medullare* presents a very small quantity of fibre-tissue, with a preponderance of the nuclei.” Besides these there are other elements met with in carcinomatous growths, which are not essential to them; these are *fat* or *oil globules*, caudate bodies which are now no longer considered as characteristic of cancer, crystals, “dead matter,” capillary vessels, epithelial scales, and cysts.

There is such difference of opinion among the best pathologists and microscopists concerning the possibility of identifying carcinomatous structures in all their varieties and under all circumstances and stages of development, that we shall forbear any remarks concerning the views expressed by Mr. Birkett on this point. We do not think, however, that he has pointed out the microscopic characteristics, as he considers them, of Cancer, with sufficient clearness and distinctiveness to enable any other observer to recognize the same with certainty.

The volume closes with a brief glance at the diseases to which the male breast is liable. These are few and of unfrequent occurrence, as compared with those of the female.

We are happy to see announced for publication, by M. Birkett, a work on “*Tumours, their structure, pathology, diagnosis, and treatment.*”

F. W. S.

ART. XXII.—*Mental Hygiene; or an Examination of the Intellect and Passions. Designed to show how they affect and are affected by the bodily functions, and their influence on Health and Longevity.* By WILLIAM SWEETSER, M. D., Professor of the Theory and Practice of Medicine in Bowdoin, Castleton, and Geneva Medical Colleges, and Fellow of the American Academy of Arts and Sciences. Second edition, re-written and enlarged. 12mo. pp. 390. New York: George P. Putnam, 1850.

No system of hygiene can be considered as complete in which the consideration of the intellectual, moral, and impulsive faculties, sentiments, and propensities of the human mind is neglected; no just and practical estimate of the means of securing health, of promoting the due and symmetrical development of the various organs of the body, and of prolonging their vigorous and regular activity to the latest possible period, can be reached unless the reciprocation of mind and body be taken into account. While the healthful action of the mere bodily organs, and the proper exercise of their respective functions are essential to mental health, it is not less true that the health of the body is, in its turn, dependent, in a very great degree, upon that of the mind, as evinced in the due and regular exercise of its several functions. Hence mental hygiene becomes an important branch of knowledge in which all are interested—individuals as well as communities—inasmuch as an acquaintance with it, and the carrying into practice the laws which it inculcates, is essential to the health, comfort, and happiness of each citizen, and to secure the peace and prosperity of society generally.

In the work before us, Dr. Sweetser has presented a very able outline of mental hygiene, well adapted for popular use. The views he has inculcated are correct; they are expressed in a plain and pleasing style, and illustrated by apt illustrations derived from ancient and modern authors—from the pages of history, poetry, and science. There is much, it is true, in relation to the proper culture and control of the mental faculties, passions, and propensities, upon which Dr. S. has not touched, and many points connected with the influence that causes which act primarily and solely upon the corporeal organs exercise

upon the intellect and passions, which in a work mainly designed for popular use might have been profitably introduced.

"At no time," remarks Dr. Bell (*Report on Public Hygiene, Trans. Coll. Phys. of Philada.*, Vol. iii. No. 3), "before or since, has the salutary union between mental and bodily exercise been so fully recognized as in ancient Greece and Rome, where the gymnasia and baths were resorted to alike by the philosopher and the soldier, the youthful aspirant for fame and the staid citizen. Often the same persons might be seen passing from the instruction of the professed athletæ to the lessons of the sages and orators in the lyceum and the academy; thus, while they secured to themselves health and a bodily vigour which should enhance their personal enjoyments and civic usefulness as defenders of the state, they acquired also those accomplishments that give virtue and dignity to the individual, and by reflection to his country and age. However much we may choose to overlook this connection between mental and bodily purity and health, it is not less a portion of natural law; and if true of the one, it is equally so of the many; and if true in private, it is, *à fortiori*, more valid still in public hygiene. When the historian speaks of fermentation among the masses, the poor, the dissolute, and the reckless, in a city or State, his language is scarcely figurative, and he may very appropriately add that this tendency to outbreak and disorder is kept up, if it be not in a great degree produced by physical deterioration and taint; by impure air causing bad blood and disordered brain, added to filth and bad food continually irritating the nervous system, and giving rise to a host of abnormal sensations. It is no straining in causation to say that sickness or disorder in the body politic is often the manifestation, as it is the effect, of a neglect of public hygiene. So also, beyond all doubt, have nations been driven into war, with its ever-attendant horrors and atrocities, owing to the dyspeptic condition or splenetic humours of princes and ministers of state."

Dr. S. has not, it is true, neglected to point out the baneful influence exerted upon the intellect and passions by causes disturbing the healthful play of function in the animal organs—he has not, however, we think, noticed to the full extent that baneful influence when it is reflected from individuals upon masses—or in its direct operation upon the peace, happiness, and prosperity of communities. But he has performed so well the task within the limits he has prescribed for himself, that we feel rather inclined to commend to the notice of our readers this second edition of his work on Mental Hygiene, than find fault with him for omitting points which we may consider as important, for neglecting to trace all the ramifications of evil liable to result from the abnormal condition of the intellect and passions, or for not dwelling sufficiently upon the several causes by which that abnormal condition may be brought about.

D. F. C.

ART. XXIII.—*Household Surgery: or, Hints on Emergencies.* By JOHN F. SOUTH, one of the Surgeons to the St. Thomas's Hospital. First American from the second London edition. 12mo. pp. 280. Henry Carey Baird, Philad., 1850.

THIS is a very comprehensive little book; and we doubt not that many honest women, into whose hands it shall fall, will, on beholding the formidable list of ills and accidents to which it professes to minister, exclaim, with uplifted hands and awe-struck eyes, as did the astonished Frenchman on a somewhat similar occasion, "Good heavens, what a host of enemies!" It contains notices, not only of the ordinary, trifling ailments of life, as "Blackheads, Ingrowing-nail, Corns, Sty, Wetting the bed," &c. &c., but also of the more important and more recondite affections and injuries, as "Fractures, Dislocations, Ruptures, Piles, Pustules on the Eye, Inflammation of the surface of the Eye, Milk Abscesses," &c. Moreover, it treats of the different methods of abstracting blood,

of Vaccination, of Bandaging, of Wounds in their various kinds and degrees, &c. &c. &c.; and of the appliances commonly employed in the local treatment of many complaints, as poultices, plasters, blisters and the like.

The volume was written and published, as the author says in the preface, for the benefit of those only who live remote from medical assistance, and of those who, at the moment of need, are unable to wait for or to obtain professional aid. Accordingly, its descriptions of injuries and diseased conditions are very concise, and couched in familiar phraseology, and the methods of treatment which it inculcates are as briefly exposed as the author's straitened limits require. If we consider merely that a certain amount of information must be conveyed within certain allotted pages, we cannot deny that Mr. South has fulfilled satisfactorily the requirements of his publisher, and given to the public as much, probably, as it can imbibe; but we cannot refrain from suspecting that the laborious translator and commentator of Chelius's *System of Surgery* is inwardly amused at the readiness with which he has satisfied both publisher and public.

We admit that such books may occasionally prove really serviceable to some of their readers; but we have not the least doubt, on the other hand, that they induce more frequently much injury, in their efforts to make "Every man his own doctor." It is indeed amusing as well as amazing, to see the besotted pretensions which ignorance displays after reading these publications. If a woman happen to have a leaky coffee-pot, she does not entrust its repair to her own skill, but straightway commits it to some reputable tinker; if, on the contrary, her child or her husband shall have broken an arm or dislocated a shoulder, she feels herself fully adequate to cure these serious accidents, because she has read the "Hints on Emergencies," by Mr. South, and the consequence too often is that the unfortunate victim of misplaced confidence is maimed or deformed for the remainder of its natural life.

If such books were read by those only for whom their authors profess to have written them, and in the circumstances for which alone they were avowedly intended, their mischievous effects would be more easily excused, and their influence would be less widely experienced. But, unfortunately, as their authors well know, and as too many of them anticipate, such publications have a more extended circulation, being greedily sought for, consulted, and confided in by those populous classes who are too conceited, too stupid, or too mean to employ an educated professional man, even when such an one is close at hand. Moreover, these books are generally intended to be the trumpeters to the public of their authors' renown. On these accounts, therefore, we regret and are surprised that Mr. South should have enrolled himself among such companions.

F. W. S.

ART. XXIV.—*Statistics of the Amputations of large limbs that have been performed at the Massachusetts General Hospital, from its establishment to Jan. 1, 1850.* By GEORGE HAYWARD, M. D., one of the Surgeons to the Hospital. Boston, 1850, pp. 15, 8vo.

In the No. of this Journal for May, 1840, will be found an interesting statistical report, by Dr. Hayward, of the amputations of large limbs which had been performed at the Massachusetts General Hospital, from the time of its establishment to Jan. 1st, 1840. Dr. H., in the present pamphlet, has republished this paper, and added to them a table exhibiting all the similar operations that have been performed from that period to Jan. 1, 1850.

The facts collected by Dr. Hayward constitute so valuable a contribution to the surgical statistics of amputations that we shall present his second table, with the deductions from it.

Amputations of Large Limbs performed at the Mass. Gen. Hospital, from Jan. 1, 1840, to Jan. 1, 1850.

No.	Name.	Age.	Time of admission.	Disease or injury.	Time of operation.	Place and kind of operation.	Result.	Time of discharge or death.	Remarks.
1	John Nowland,	23	1839. Nov. 26.	Compound and comminuted fracture of the thigh.	1840. July 25.	Above knee—flap.	Died.	July 25, 1840.	
2	Stillman Hubbard,	32	1840. Dec. 24.	Caries of elbow.	1841. March 13.	Above elbow—circular.	Recovered.	April 3, 1841.	
3	Bridget Duffie,	50	1841. Aug. 14.	Compound fracture of leg.	Aug. 14.	Below knee—circular.	Recovered.	Oct. 9, 1841.	
4	Samuel Brown,	56	1842. March 14.	Osteo-sarcoma of hand.	1842. March 19.	Below elbow—circular.	Recovered.	April 2, 1842.	
5	John F. Homer,	34	March 16.	Chronic ulcer of leg.	"	Above knee—circular.	Recovered.	May 5, 1842.	
6	Jedediah Little,	73	Oct. 18.	Chronic ulcer of leg.	Nov. 5.	Below knee—flap.	Recovered.	Dec. 26, 1842.	
7	Olwyn T. Jones,	19	Nov. 16.	Disease of knee.	Nov. 19.	Above knee—circular.	Recovered.	Dec. 29, 1842.	
8	Henry Walker,	14	1843. May 4.	Tubercular disease of hand.	1843. May 10.	Below elbow—circular.	Recovered.	July 5, 1843.	
9	Elizabeth Pickett,	17	June 10.	Disease of knee.	Oct. 14.	Above knee—flap.	Died.	Nov. 12, 1843.	
10	Edward Flegg,	45	Nov. 17.	Caries in stump.	Nov. 18.	Below knee—circular.	Recovered.	Dec. 16, 1843.	
11	Granv. D. Bragdon,	30	1844. Nov. 7.	Disease of knee.	1844. Dec. 14.	Above knee—flap.	Recovered.	Feb. 18, 1845.	
12	Thomas Smith,	53	1845. March 6.	Compound and comminuted fracture of the leg.	1845. March 6.	Above knee—circular.	Recovered.	July 1, 1845.	
13	Daniel Tarbox,	60	March 10.	Ulcer of leg—20 years.	March 15.	Below knee—circular.	Recovered.	April 22, 1845.	
14	Lewis C. Blaisdell,	31	April 15.	Compound and comminuted fracture of the wrist.	April 15.	Below elbow—circular.	Died.	April 19, 1845.	
15	Michael Welch,	24	May 19.	Scrofulous disease of knee.	June 17.	Above knee—circular.	Recovered.	Aug. 25, 1845.	
16	John Field,	40	July 17.	Compound fracture of leg.	Oct. 4.	Below knee—circular.	Recovered.	Oct. 29, 1845.	
17	Michael Devine,	21	July 25.	Compound and comm. frac. of leg.	Aug. 9.	Below knee—circular.	Recovered.	Sept. 9, 1845.	
18	Hector Holmes,	21	Aug. 5.	Gangrene from injury to thigh.	Aug. 16.	Above knee—flap.	Recovered.	Oct. 3, 1845.	
19	Thomas Doland,	25	Aug. 7.	Compound and comminuted fracture of the thigh.	Aug. 16.	Above knee—circular.	Recovered.	Oct. 18, 1845.	
20	John E. Barnes,	19	Oct. 17.	Ulcer, with contracted knee.	Nov. 8.	Above knee—flap.	Recovered.	Dec. 2, 1845.	
21	Eben C. Johnson,	12	Dec. 26.	Disease of knee.	Dec. 27.	Above knee—flap.	Died.	Dec. 28, 1845.	

A Table of the Amputations of Large Limbs—Continued.

No.	Name.	Age.	Time of admission.	Disease or injury.	Time of operation.	Place and kind of operation.	Result.	Time of discharge or death.	Remarks.
22	John Hooper,	10	1845.	Disease of knee.	1846.	Above knee—flap.	Recovered.	July 2, 1846.	Inhaled sul. ether.
23	Alice Mohan,	18	March 7.	Disease of knee.	May 23.	Above knee—flap.	Recovered.	Dec. 22, 1846.	"
24	Theophilus Petier,	35	Nov. 16, '46	Compound and comminuted fracture of the leg.	Nov. 16.	Below knee—flap.	Recovered.	April 3, 1847.	"
25	Ann Kerr,	18	1846.	Periostitis of foot.	1847.	Below knee—flap.	Recovered.	May 13, 1847.	"
26	Catharine Crowley,	56	July 8.	Necrosis of tibia.	April 3.	Below knee—flap.	Recovered.	April 20, 1847.	"
27	Fanny Abbot,	42	Dec. 23.	Disease of ankle.	Jan. 9.	Below knee—circular.	Recovered.	Feb. 23, 1847.	"
28	James Mitchel,	27	1847.	Compound and comminuted fracture of the leg.	Feb. 20.	Below knee—circular.	Recovered.	July 31, 1847.	"
29	Dennis Pickett,	30	April 6.	Compound fracture of knee.	April 7.	Above knee—circular.	Died.	April 9, 1847.	"
30	Patrick Conny,	39	March 24.	Compound and comminuted fracture of the leg.	March 24.	Below knee—circular.	Died.	March 30, 1847.	"
31	Patrick Kidney,	22	May 25.	Lacerated wound of arm.	June 8.	Above elbow—circular.	Recovered.	Sep. 2, 1847.	"
32	Abner Johnson,	60	May 31.	Necrosis of tibia.	June 5.	Above knee—circular.	Died.	July 4, 1847.	"
33	Francis Manuel,	19	June 14.	Disease of fibula.	Oct. 2.	Below knee—flap.	Recovered.	May 20, 1848.	"
34	Jacob D. Edwards,	45	June 24.	Compound fracture of arm.	June 24.	Above elbow—circular.	Died.	June 24, 1847.	"
35	Benj. Hammond,	39	July 12.	Disease of knee.	July 14.	Above knee—flap.	Recovered.	Aug. 9, 1847.	"
36	S. H. Jones,	25	Aug. 27.	Fungus hematodes—leg.	Sep. 4.	Above knee—flap.	Recovered.	Oct. 28, 1847.	"
37	Michael Sullivan,	34	Sep. 1.	Disease of knee.	Nov. 6.	Above knee—flap.	Died.	Nov. 12, 1847.	"
38	Patrick Doherty,	40	Sep. 2.	Compound fracture of foot.	Sep. 2.	Below knee—circular.	Recovered.	Sep. 3, 1847.	"
39	Nathan Butler,	60	Sep. 15.	Malignant disease of elbow.	Sep. 18.	Above elbow—circular.	Recovered.	Dec. 13, 1847.	"
40	John Madden,	25	Sep. 21.	Compound fracture of leg.	Sep. 27.	Below knee—flap.	Recovered.	Jan. 14, 1848.	"
41	Peter Catten,	26	Sep. 27.	Wound of foot.	Sep. 27.	Below knee—circular.	Recovered.	Dec. 21, 1847.	"
42	John Nightingale,	63	Sep. 29.	Malignant disease of arm.	Oct. 2.	Above elbow—circular.	Recovered.	Dec. 13, 1847.	"
43	Michael Clark,	23	Nov. 27.	Gangrene from ligature of the femoral artery.	1848. Jan. 10.	Above knee—flap.	Recovered.	Aug. 5, 1848.	Inhaled chloroform.
44	Michael M'Soley,	22	1848.	Disease of knee.	March 11.	Above knee—flap.	Recovered.	May 31, 1848.	Inhaled sul. ether.
45	Benj. T. Perkins,	33	April 7.	Compound fracture of knee.	April 7.	Above knee—flap.	Died.	April 12, 1848.	"

46	Eliz. Phenau,	6	March 13.	Compound fracture of leg.	March 13.	Below knee—flap.	Recovered.	July 31, 1848.	Inhaled sul. ether.
47	James Smith,	20	March 31.	Comp'd and comminuted frac. of leg.	March 31.	Above knee—flap.	Recovered.	May 8, 1848.	Inhaled chlo. ether.
48	Dennis Casey,	28	April 28.	Injury to arms (powder).	April 28.	Ab. & bel. elb.—flap.	Recovered.	Aug. 4, 1848.	" "
49	Hannah Donovan,	30	April 27.	Compound fracture of foot.	April 27.	Below knee—flap.	Recovered.	Aug. 10, 1848.	" "
50	James M. Jones,	23	June 7.	Disease of knee.	July 15.	Above knee—circular.	Recovered.	Aug. 19, 1848.	Inhaled sul. ether.
51	John Canfield,	10	Nov. 8.	Compound fracture of foot.	Nov. 11.	Below knee—flap.	Died.	Nov. 15, 1848.	" "
52	Dennis Hurley,	36	Nov. 17.	Rupture of femoral artery.	Nov. 18.	Above knee—circular.	Recovered.	April 7, 1849.	" "
53	Timothy Lynch,	24	Dec. 7.	Gangrene of foot—accident.	Dec. 9.	Below knee—flap.	Recovered.	March 2, 1849.	" "
54	Lucy Thresher,	26	Dec. 15.	Malignant disease of hand.	Dec. 25.	Bel. elbow—circular.	Recovered.	Jan. 18, 1849.	" "
55	John Rogers,	23	Aug. 23.	Scrofulous disease of foot.	1849.				
56	Zimri Heywood,	10	Dec. 11.	Disease of knee.	Jan. 18.	Below knee—circular.	Recovered.	Feb. 14, 1849.	" "
					March 31.	Above knee—flap.	Recovered.	May 9, 1849.	Inhaled chlo. ether.
57	Thomas Doroty,	30	Feb. 11.	Compound and comminuted fracture of leg.	March 17.	Above knee—flap.	Recovered.	May 10, 1849.	" "
58	Bridget Shea,	28	April 2.	Scrofulous disease of foot.	May 2.	Below knee—flap.	Recovered.	July 4, 1849.	" "
59	Ann J. Prince,	17	April 3.	Ulcer of foot—16 years.	April 7.	Below knee—flap.	Recovered.	July 4, 1849.	" "
60	Morris Brown,	40	April 2.	Compound and comminuted fracture of leg.	April 2.	Above knee—circular.	Died.	April 2, 1849.	" "
61	Lawrence Britain,	22	April 7.	Compound fracture of arm.	April 7.	Above elbow—flap.	Recovered.	May 28, 1849.	" "
62	Andrew Hall,	27	May 8.	Compound and comminuted fracture of leg.	May 9.	Below knee—flap.	Died.	May 22, 1849.	" "
63	Caleb Kendall,	42	May 9.	Necrosis of femur.	May 30.	Above knee—flap.	Recovered.	Aug. 17, 1849.	" "
64	James Brady,	37	May 12.	Compound fracture of hand.	May 12.	Below elbow—flap.	Recovered.	July 22, 1849.	" "
65	James M'Koy,	39	June 19.	Compound and comminuted fracture of thigh and leg.	June 20.	Ab. and bel. kn.—flap.	Died.	June 20, 1849.	Inhaled sul. ether.
66	Charles Dennett,	34	July 20.	Compound fracture of leg.	Aug. 22.	Below knee—circular.	Died.	Sept. 3, 1849.	" "
67	Lawrence Mazenty,	25	Aug. 24.	Compound fracture of leg.	Sept. 11.	Below knee—flap.	Recovered.	Feb. 2, 1850.	" "
68	Thomas Dyke,	22	Sept. 4.	Malignant disease of fibula.	Sept. 5.	Above knee—circular.	Recovered.	Nov. 3, 1849.	" "
69	William G. Hunting,	33	Sept. 7.	Disease of knee.	Sept. 8.	Above knee—circular.	Recovered.	Nov. 30, 1849.	" "
70	Sylvest. O. Sullivan,	33	Oct. 6.	Compound and comminuted fracture of the leg.	Oct. 6.	Below knee—circular.	Recovered.	Dec. 25, 1849.	Inhaled chlo. ether.
71	Samuel R. Emmons,	48	Oct. 17.	Necrosis of femur.	Oct. 20.	Above knee—circular.	Recovered.	July 28, 1850.	" "
72	Daniel Hogan,	27	Oct. 23.	Malignant disease of thigh.	Oct. 24.	Above knee—circular.	Died.	Dec. 23, 1849.	" "
73	Theo. S. Cushing,	32	Nov. 27.	Ulcer, in cicatrix of burn.	Dec. 15.	Above knee—flap.	Recovered.	Feb. 7, 1850.	Inhaled sul. ether.
74	David Long,	21	Dec. 15.	Compound fracture of thigh.	Dec. 15.	Above knee—circular.	Recovered.	Feb. 1, 1850.	" "

It appears from this table that from Jan. 1840 to Jan. 1850 there were seventy-six amputations of large limbs performed on seventy-four patients, two patients having two limbs removed at the same time. One of them had one leg taken off above the knee, and the other below; and the other patient had one arm amputated above the elbow, and the other below. The first patient died, and the other recovered.

There were seventeen deaths: one of these was from tetanus, and another from phthisis. All the amputations of the lower extremity were above the ankle, and all those of the upper were above the wrist.

There were 35 amputations of the thigh, and 10 deaths.

"	28	"	below the knee, and 5	"
"	7	"	above the elbow, and 1	"
"	6	"	below the elbow, and 1	"

—
76 amputations.

—
17 deaths.

Ten of the amputations of the thigh were performed in consequence of injury, and twenty-five in consequence of disease, and five of each of these two classes of patients died; that is to say, one-half of the former and one-fifth of the latter.

On the five patients who died after amputation below the knee, the operation was performed in every instance in consequence of injury; and in the two fatal cases of amputation of the arm, the operation was done on patients who had severe compound fractures.

Forty of the patients had amputation performed in consequence of disease, and only five died; being one in eight; and the remaining thirty-four had been injured, and twelve died, being more than one-third.

"It is apparent, therefore," says Dr. K., "that the fatal result is not altogether attributable to the operation, but is in no small degree dependent upon the injury which the patient has received, or the peculiar state of system induced by it."

"There is one circumstance that has probably been observed by every one who has had frequent occasion to amputate for railroad accidents, and that is, the great tendency of the parts in the neighbourhood of the injury to slough after the operation. These accidents, when sufficiently severe to require amputation, are usually caused by a wheel of a locomotive engine or railway car passing over the limb. This in most instances produces a compound and comminuted fracture of the worst kind."

"If the operation be performed in the immediate neighbourhood of the injury, however sound the parts may appear to be at the time, they will in most cases slough to a greater or less extent, and leave the bone protruding beyond the soft parts, so as to require the removal of a portion of it at a subsequent period. This is on every account a very unpleasant result, and we cannot feel confident that it may not happen, unless the operation be done at a greater distance from the injury than it is usual to do it in ordinary cases of accident. The vitality of the parts seems to be destroyed to a greater extent than is common in similar accidents that are caused by a less degree of violence. Or perhaps it would be more proper to say that their condition resembles that which is spoken of by military surgeons under the name of local asphyxia, as sometimes occurring from gunshot wounds. It is a state of suspended animation, differing from death only in the fact that the power of resisting decomposition is for a time retained, but the debilitating effect of an operation is very sure to destroy this."

It appears that in one-half of the operations the circular amputation was adopted, and in the other half the flap. Nine of the former died, and eight of the latter.

Forty-eight of the patients inhaled some anæsthetic agent; twelve of this number died. It is well known that it was at this hospital that these agents were first successfully employed in general operative surgery; and so entirely satisfactory have been the results that no operation of any importance is now performed there without the patient being previously rendered insensible to suffering by these means. It may not be amiss to add that no fatal effects have followed their administration, nor has any serious ill consequence in a single instance ensued from it.

From these tables, it appears then that the whole number of amputations of large limbs that have ever been performed at the hospital is one hundred and forty-six on one hundred and forty-one patients. Of this number, thirty-two died.

Eighty-five had their limbs removed in consequence of disease; of whom ten died.

Fifty-six in consequence of injury; of whom twenty-two died; being one in eight and a half of the former, and more than one in three of the latter.

69 patients had the thigh amputated—19 died.

50 had the leg removed below the knee—10 died.

11 had amputation above the elbow—1 died.

11 “ below “ 2 died.

141

32

The ages of the patients were as follows:

Under 20 years of age, 26, of whom 4 died.

Between 20 and 30 56, “ 11 died.

“ 30 and 40 28, “ 10 died.

“ 40 and 50 18, “ 5 died.

“ 50 and 60 7, “ 1 died.

“ 60 and 70 4, “ 1 died.

Over 70 2, “ 0 died.

141

32

ART. XXV.—*Summary of the Transactions of the College of Physicians of Philadelphia.* From August 7th to October 1st, 1850, inclusive. Vol. III. No. 3. pp. 126, 8vo.

THIS number of the Transactions of the Philadelphia College of Physicians is an exceedingly interesting one. The communications made to the college, and the reports of the discussions which it contains, show that the society is most zealously and actively engaged in cultivating our science, in extending its resources and usefulness, and in upholding its character and dignity.

We shall notice some of the more interesting of the communications.

Adulteration of Lac Sulphuris.—Dr. MEIGS stated “that he had for a long time been accustomed to employ lac sulphuris, as much as would lie on the handle of a teaspoon, say from four to five grains, mixed with honey and water, as a prescription in the cases of costiveness occurring in infants. Given daily, he had found it to act as an effectual aperient; and in a short time has known its use to overcome entirely the costive habit. Recently, however, he had been much disappointed in the effects of the lac sulphuris in such cases, and upon instituting an inquiry into the cause of this disappointment, he has ascertained that it is in consequence of the lac sulphuris of the shops containing but one-half of pure sulphur, the remainder being sulphate of lime. This sophistication may be readily detected by the application of heat, when a black incombustible mass will be found to remain.”

Dr. BRIDGES remarked “that the ordinary lac sulphuris of the shops contains but forty per cent. of pure sulphur. If a pinch of it be taken between the fingers, it will be found to have a soft feel, like that communicated by an impalpable powder, whereas pure lac sulphuris will have a gritty feel. The sophisticated article is also of a white colour, while the pure article is of a cream or even dirty yellow colour.”

Coup de Solèil.—“Dr. PEPPER called the attention of the College to the subject of the pathology and treatment of the affection known as *coup de solèil*, or stroke of the sun, as one upon which there appears to exist very loose and erroneous notions. In looking over the hospital records, he found that within the last seven years, twenty patients had been treated in the institution for stroke of the sun; of these, *ten* died, *seven* recovered, and *three* became affected

with a chronic affection of the brain, eventuating in insanity. These patients had all been bled before admission.

"The prominent symptoms of the disease are violent convulsions, with a thready, irregular, and sometimes scarcely perceptible pulse, and dilated pupil. In the intervals of the convulsions, the patient is often affected with muscular tremors, like those of paralysis agitans. The surface is rather cool than hot. Dr. Pepper had recently witnessed four post-mortem examinations of patients who had perished from stroke of the sun. The brain exhibited no indications of congestion, nothing, in fact, of an unusual appearance; Dr. P. was, however, struck with the appearance of the heart. In all of the four subjects it was pallid, flaccid, and softened, while the other muscles of the body were florid and firm. The lining membrane of the heart and of the large blood-vessels was of a very dark, almost purple, colour. The cavities of the heart contained but little blood, and no coagulum. Louis describes similar post-mortem appearances as occurring in rapidly fatal cases of typhoid fever. The examinations referred to by Dr. P. were made from six to eight hours after death. The softening of the heart and discoloration of the lining membrane were not the effects of commencing decomposition; they were evidently the results of disease.

"By many, the symptoms produced by exposure to intense heat are supposed to be the result of congestion of the brain. Apoplexy may unquestionably result from insolation, but the cases we usually meet with during the intense heat of our summers present no symptoms similar to those which result from cerebral congestion, and demand for their cure stimulants instead of bleeding.

"In all of the cases seen by Dr. P. which terminated fatally, death took place in six hours. In those who survived, recovery was very slow; the mind continued for some time very much confused; some became insane; one became affected with partial paralysis, and one with amaurosis.

"Stroke of the sun generally occurs in persons engaged in some laborious occupation, when exposed, for the most part, to the direct rays of the sun. By the combined effects of violent muscular exertions and the heat of the atmosphere, the heart is stimulated to a degree of morbid activity, copious perspiration flows from every part of the surface of the body, fatigue speedily ensues, and the heart, exhausted by its morbid activity, causes a passive congestion of the capillaries to take place throughout the body. The disease is evidently one of nervous exhaustion. The cases of apoplexy and congestion of the brain occasionally produced by insolation should be carefully distinguished from the cases above alluded to, the pathology and treatment of the two being very different.

"In five cases which fell under the notice of Dr. Pepper, all of which were treated by stimulants—ammonia and brandy internally when the patient could swallow, and stimulating injections when this was not the case—three recovered, and two died. Dr. P. considered it a remarkable circumstance that this affection has received so little attention on the part of medical writers. In consulting the standard authorities, we find but little said in reference to it, and that little generally vague and unsatisfactory. Dr. P. brought it forward now, that it may elicit from the Fellows of the College the attention it would appear to merit.

"By some it has been supposed that coup de solèil is the result of a sudden change, produced by the action of the sun's rays in the blood; the absence of organic lesions, and the fluid condition of the blood, have no doubt led to this belief."

"Dr. CONDIE remarked that he recognized the cases described by Dr. Pepper as of common occurrence during every summer of unusual warmth. They are ordinarily met with among those whose labours are carried on in the open air, without shelter from the heat of the sun. He believed, also, that they occurred most commonly in those labourers who are addicted to the intemperate use of intoxicating drinks. That in these cases the morbid phenomena are the result of exhaustion, he has never had any doubt, and cannot conceive upon what principle bleeding and other depleting remedies have been resorted to in their

treatment. When called to such a case, he has invariably directed cold to be applied to the head, sinapisms or stimulating frictions to the extremities, stimulating injections into the rectum, and so soon as the patient is able to swallow, stimulants internally. But there are another class of cases produced by exposure to the direct rays of the sun, of a very different character. In these, the head particularly, and often the entire surface, is intensely hot, the eyes are injected, and the pupils contracted; the pulse is small, quick, and corded, and the tongue red and dry. The patients are delirious, morose, or restless, and in a constant state of agitation. If this condition of things be not subdued by appropriate and active treatment, a state of coma ensues, and the patient dies, as in cases of acute meningial inflammation. That these cases are dependent upon acute meningitis, Dr. C. has convinced himself by an examination of the brain after death. In this form of sun-stroke, active depletion by the lancet is demanded; stimulants internally administered would but aggravate the symptoms and accelerate the fatal result.

“He believes the cases described by Dr. P. to be produced by the exhausting effects of active bodily labour carried on in an overheated atmosphere. He recollects that in the winter of 1818–19, he was called to a coloured preacher of one of the methodist churches in the southern part of the city, who, during the severe bodily exertions, and loud and prolonged exhortations which constitute the religious exercises of these people, carried on in an overheated, crowded, and confined room, was suddenly seized with convulsions, alternating with almost constant nervous tremors; his pupils were dilated, his countenance was slightly flushed but relaxed, his pulse was feeble and thread-like, and his surface cool and clammy. By stimulating frictions to his surface, and the cautious use of stimulants internally, his convulsions were soon quieted, and his pulse increased in volume and strength; but he lay for two or three days in a languid and almost insensible state, from which he very slowly recovered; and, for many weeks afterwards, upon any undue exertion or excitement, he was liable to fall back into the same condition. In this case the disease was produced by the exhausting effects of undue exertion in a heated and confined atmosphere; and he believed that in those who are attacked whilst labouring in the open air, during the intense heat of summer, it is also produced by exhaustion, and not by any direct influence of the sun’s rays, as some have supposed. That the direct influence of intense solar heat may produce congestion of the brain and apoplexy, Dr. Pepper admits, and Dr. C. has known it to produce also well-marked acute meningitis. A gentleman about to leave the city by steamboat was detained, in conversation with a friend, until near the hour of the boat’s departure. Hurrying along at mid-day, exposed to the rays of a July sun, lest the boat, with his baggage on board, should leave him, he fell down in the street in convulsions. The convulsions were followed in a few hours by all the symptoms of acute meningitis. The gentleman’s life was saved by active depletion by the lancet and cups, active purging, blisters, and the other remedies adapted to a case of encephalic inflammation.”

Cases of Pseudo-Membranous Croup.—Dr. PEPPER read the following account of two fatal cases of this disease.

“The first case was that of a little girl, aged six years. The disease commenced with slight hoarseness and some soreness of the throat; but the child continued to play about the house, and the symptoms were so slight as not to excite the least uneasiness on the part of the parents. The following morning I was requested to visit the child, and found it suffering with slight fever, huskiness of the voice, and occasional croupy cough. The fauces, soft palate, and tonsils were somewhat injected, but no trace of false membrane could be detected. An emetic of ipecacuanha was promptly administered, and this was followed by calomel, gr. vi; during the afternoon some twenty-five leeches were applied over the larynx, with evident relief of the symptoms. During the night she took a teaspoonful of the following mixture every two hours: syr. ipecac., syr. senegæ, āā ʒj. She was also directed calomel, gr. j, every two hours.

“On the morning of the third day of her attack, there was a decided remission of the most distressing symptoms; the hoarseness, dyspnoea, and fever had

all greatly abated, and hopes were now entertained that the disease had yielded; but towards evening the fever had increased, and with it there was a decided increase of the laryngeal symptoms. The voice had now become suddenly reduced to a mere whisper, the cough was muffled, and the dyspnœa extreme; the paroxysm, however, only lasted a few minutes, and was succeeded by a decided calm. Upon inspecting the throat, now, for the first time, patches of fibrinous exudation were seen upon the tonsils. These were touched with a solution of the nitrate of silver, in the proportion of twenty grains to the ounce of water, and after this free vomiting was induced by a large teaspoonful of powdered alum mixed in molasses. The child was also placed in a bath at the temperature of 95° F., and a small blister was applied over the larynx, and allowed to remain on only one hour.

"Late on the same evening there was a return of the distressing symptoms, and Dr. C. D. Meigs now saw the patient with me. At this time the voice was whispering, the cough suppressed, and the breathing more or less stridulous. The child being vigorous, it was deemed expedient to draw blood from the arm, and the blood thus drawn—amounting to about ℥iv .—presented a decided buffy coat. In this connection, I may, however, observe that the vesicated surface over the larynx had not become covered with the diphtheritic exudation so commonly seen in pseudo-membranous croup. Some relief followed the depletion, and the child passed a tolerably comfortable night. The following morning she commenced taking, every hour, a teaspoonful of tartar emetic solution, in the proportion of one grain to eight ounces of water. During the day the attacks of oppression became more and more frequent, and we were occasionally obliged to resort to the alum emetic and warm bath to relieve those paroxysms. The vomiting was always followed by temporary relief, but at no time was there any false membrane discharged, though occasionally the secretions of the fauces, coagulated by the alum, presented somewhat that appearance.

"On the fifth day of the attack, the dyspnœa, loss of voice, and stridulous breathing had become more permanent; the pulse was feeble, and the patient evidently more prostrate; there was slight œdema of the face, and the lips and nails were a little blue. She was now directed wine whey and chicken soup; and, in place of the tartar emetic, she took one of the following powders every two hours: *antimonii sulphuret. præcip.*, grs. ii, *potassæ nitrat.*, grs. xviii, *calomel*, grs. ii, divided into eight powders. No important change occurred in the case up to the following day, when at the time of visit there was another remission, and the patient really appeared better. The exudation had entirely disappeared from the palate and tonsils; distinct vesicular murmur could be heard throughout the lungs, masked only occasionally by sibilant and sonorous rattles; and the percussion over both lungs was perfectly natural. During the day, however, there was a return of the severe croupy symptoms; and at such times the little sufferer would tear at her throat in the greatest agony. Emetics, with the warm bath, and an occasional anodyne enema, afforded temporary relief; but about five o'clock the same evening, whilst emerging from the bath, she was seized with general convulsions, accompanied by dyspnœa, threatening immediate dissolution. I had left the patient but a few minutes, and on my return found that several medical friends had been called in during the alarm of the family. The pulse was frequent and feeble, the respiration hurried and laborious, and the child more or less cyanosed. Strong wine whey was now freely administered, whilst, at the same time, sinapisms were applied to the extremities. Under this treatment, the circulation and respiration were again, in a measure, restored, and the child's condition rendered far more comfortable.

"It was, however, apparent that another such attack must inevitably prove fatal. Other means having failed, tracheotomy now appeared to afford the only chance. The operation was not urged upon the parents, but was anxiously sought after by them. Accordingly, at six P. M., the child was placed upon the table, and the trachea opened by Dr. Goddard, in the presence of Drs. C. D. Meigs, Page, and J. H. B. McClellan. A folded pillow was placed under the neck, so as to bring the trachea into bold relief. An incision, about an inch and a half long, and nearly an inch deep, was necessary before the trachea could be exposed; several of its rings were now rapidly divided; but at this

stage of the operation there was some slight delay, owing to the necessity of applying a ligature to control the copious venous hemorrhage. When the trachea was first opened, the child had a convulsive movement, and rapidly passed into a state of perfect syncope; but from this it soon recovered, and the blood, which had been drawn into the bronchia by the acts of inspiration, was now forcibly driven out by the violent expiratory efforts. Small portions of the trachea on either side of the incision were now removed, so as to leave an opening somewhat larger than the rima glottidis; and this was kept open by means of a thick leaden wire passing under the neck, each end pressing upon the lips of the wound. By a delicate pair of forceps, several large pieces of false membrane were drawn out of the trachea, whilst any viscid mucus or other secretions which tended to obstruct the orifice were carefully removed by small pieces of moistened sponge. It was not deemed necessary or expedient to swab out the trachea by means of a small probang, as recommended by Trousseau; nor was a solution of the nitrate of silver applied to the mucous membrane, with the view of preventing further exudation. In fact, the respiration through the artificial opening appeared so free and easy that it was considered best not to resort to any apparently uncalled-for manipulations. To prevent the injurious effect of cold air coming in immediate contact with the sensitive bronchia, an elevated temperature of the air of the apartment was maintained throughout the after-treatment.

"About one hour after the operation, the pulse was 130, and the respirations about thirty in the minute. The temperature was also good, and the colour had returned to the cheeks and lips. The child appeared perfectly conscious, but of course could make no articulate sound or even whisper, since no air now passed through the glottis. She also swallowed with great ease the milk punch which was administered on account of the exhaustion consequent upon the operation. When small pieces of ice were placed in the mouth, they were eaten with avidity and apparent pleasure. Towards morning, however, there was an evident change for the worse; the fluids given by the mouth now passed into the larynx, and appeared at the wound, and thus tended to excite spasmodic cough; the pulse rose to 140, and became more feeble; and carpo-pedal spasms were almost constant. To relieve this spasmodic condition, several enemata of laudanum were administered, but without affording any relief. From this time the respiration and pulse gradually became more frequent and feeble, and the patient gradually sank, and expired at two P. M. the following day—just twenty hours after the operation, and about six days from the commencement of the attack.

"*Examination post-mortem the following day.*—Patches of false membrane were found adhering to different parts of the larynx, particularly about the ventricles; and the mucous membrane throughout was minutely injected and somewhat tumid, but not ulcerated. Commencing about one inch below the opening, the trachea was completely coated with firmly adherent plastic or fibrinous exudation, which extended into the large bronchia, and even into some of the minute ramifications. The small bronchial tubes were not, however, so completely obstructed by the false membrane as to preclude the possibility of air having entered the cells of the lungs during forcible inspiration. The exudation was, however, perfectly white, and exceedingly tough, so that it could be drawn out in small strips or shreds. The mucous membrane of the trachea and bronchia was in much the same condition as that of the larynx. No pneumonia or emphysema, or even congestion of the lungs could be detected. The right cavities of the heart contained a large and firm fibrinous concretion, which was prolonged for some extent into the pulmonary artery. The other organs appeared to be perfectly healthy.

"In the case narrated, the exudation did not commence in the fauces, as is most commonly the case in the diphtheritic form of croup, described by Bretonneau and other continental authors. This absence of plastic exudation on the tonsils, together with the fact that no false membrane was discharged in the act of vomiting, rendered it somewhat difficult at first to recognize the exact character of the disease. The vibratory sound mentioned by Barth and Roger as indicating the presence of floating false membrane in the larynx and trachea,

though carefully sought after, could not be detected in the present instance. The loss of voice, in connection with the stridulous breathing which supervened at the end of the second day, were well calculated to excite the worst suspicions; and it was those symptoms which led to the further examination of the throat, and the ultimate detection of the exudation on the tonsils. It is, however, by no means improbable that at first it was in reality a case of simple catarrhal croup, and that the exudation was but the ultimate result of a high grade of inflammation occurring in a vigorous child. This view of the case is more or less confirmed by the fact that no diphtheritic exudation was formed on the vesicated surface, as so commonly occurs in an asthenic condition of the system. In this case the character and extent of the false membranes were different from what occur in ordinary diphtheritis; they were tough and white, and extended far into the ramifications of the bronchia, whereas, in the few cases of diphtheritic croup that have fallen under my observation, the membrane has been ash-coloured, soft and pulpy, and in a great measure confined to the larynx and trachea. Guersent states that in not more than one case out of three does the false membrane extend into the bronchia. Dr. C. West, on the other hand, states that in England nothing is more common than to find the plastic exudation impacted into the small bronchia, and such is most unquestionably the case in the asthenic form in our own country.

"From the history of the case, it is by no means improbable that the inflammation invaded the bronchia, trachea, and larynx simultaneously, and gave rise to the rapid deposit of false membrane on the different parts of the mucous membrane. Under such circumstances, the application of caustic to the tonsils with the view of preventing an extension of the mischief to more vital parts could have been of but little avail. It is also quite evident that in such a case the operation of tracheotomy would afford only a very slight prospect of success; in the present instance, however, the true state of the case was only revealed after death. But a few hours previous to the operation, distinct vesicular murmur could be heard throughout both lungs; and from this the inference was fair that in all probability the bronchial tubes were unobstructed. Under this impression the operation was performed, and yet the autopsy revealed a considerable amount of exudation in the bronchia—not sufficient, it is true, to have prevented the development of the respiratory murmur heard so distinctly during life, but quite enough to have very materially interfered with the ultimate result of the operation.

"The next case was that of a boy aged five years; he was a delicate and feeble child, suffering with habitual enlargement of the tonsils. For the first six or seven days he had occasional cough and slight hoarseness, but was not considered sick, and had been allowed to play about as usual. The compound syrup of squill had been freely given with the view of inducing vomiting, but failed to produce the desired effect. No other treatment was pursued up to the night of the tenth day, when the child becoming alarmingly ill, Dr. F. W. Sargent was called in consultation with Dr. Spackman. They found him suffering with hoarse, stridulous cough; his breathing was laborious and noisy, his face flushed, skin hot and moist, voice reduced to a mere whisper; the pulse, though greatly accelerated, was not particularly full or strong. At this time the throat was carefully examined, but no exudation could be seen; the tonsils, however, were large and inflamed. An emetic of powdered alum was now directed, an onion poultice was applied to the neck, and the child was placed in a hot bath. Calomel, grs. ii, with Dover's powder, gr. ss, were to be given every two hours; and to relieve the spasm three drops of laudanum were also directed.

"On the following day the symptoms continued much the same, and fifteen leeches were now applied over the larynx, the alum being continued, occasionally, in emetic doses during the day; equal parts of powdered alum and sugar were also applied to the fauces every two or three hours.

"I saw the patient for the first time on the following morning, or on the twelfth day from the commencement of the attack. The lips and nails were now blue, and the respiration was permanently stridulous, and attended with rapid dilatation of the nostrils; pulse 120, soft and full; surface bathed with perspiration. The tonsils were coated with an ash-coloured exudation, and

were accordingly freely touched with a solution of nitrate of silver, in the proportion of grs. xv to the ounce of water; this solution was also applied to the glottis and posterior part of the epiglottis, by means of a small curved probang. A small blister was applied to the front of the neck, and allowed to remain on for two hours. The alum emetics were continued as before, as were also the calomel powders, in connection with syr. senegæ, $\mathfrak{z}\text{i}$, every two or three hours. For nourishment, he now took freely of wine whey and broth. The next day the child was more cyanosed; dyspnoea extreme; countenance anxious; and yet he appeared free from pain, and in a listless condition. The above treatment was continued, with the addition of gr. i carb. ammoniæ every hour; and as the disease was evidently fast tending to a fatal termination, the operation of tracheotomy was proposed. The father, however, had fully reflected upon this subject, and preferred leaving the child to its fate. It expired about noon of the same day—just thirteen days from the commencement of the attack.

“The body was examined the following day. There was considerable emaciation, so that the outline of the larynx and trachea were unusually prominent for a child of that age. On cutting down upon the trachea, no blood-vessels were found over the usual seat for opening this tube in cases of croup. The epiglottis and tonsils were coated with a thick grayish exudation, and this extended into the ventricles of Morgagni, and, in fact, throughout the entire larynx; but it was strictly confined to this locality, not a vestige of false membrane being found either in the trachea or bronchia. About the ventricles the mucous membrane presented a worm-eaten appearance; considerable œdema of the glottis also existed. The mucous membrane lining the trachea and larger bronchia was soft and injected, and completely covered with muco-puriform matter. Lungs, heart, and other organs perfectly healthy.

“In connection with this case, I may mention that an elder brother had died with this disease some days previously, and that a younger member of the family had been threatened with the same affection, which, however, was fortunately checked by the timely administration of an emetic, and the prompt application of the nitrate of silver to the tonsils. All the children of this family had enlarged tonsils, and were evidently of a scrofulous diathesis; the parents, however, were apparently perfectly healthy.

“In this case the disease was evidently more asthenic, and the appearances revealed by dissection were such as are most commonly found under these circumstances. The exudation was ash-coloured, soft, and pulpy, and limited to the larynx. No doubt this condition would greatly have favoured the operation of tracheotomy, since there would have been no obstruction below the orifice; under these circumstances, it is highly probable that the muco-puriform matter would have been readily discharged by the spasmodic cough which so constantly follows an opening into the trachea; or, at all events, these secretions could have been readily removed by small small probangs, whilst, at the same time, their further deposit could have been prevented by the alterative effects of a weak solution of the nitrate of silver instilled into the trachea, after the manner recommended by Trousseau. The prostration in the advanced stage of the disease was, in a great measure, the result of imperfect ventilation of the blood; and this difficulty once removed the child could easily have been sustained by stimuli. Besides, we should remember that in the present case the absence of adipose matter was exceedingly favourable to the operation. There is one interesting fact, however, in connection with this case, which was not alluded to when speaking of the symptoms: the day previous to the decease of the child, the state of the respiration was carefully examined, and not the least respiratory murmur could be heard over any part of the chest. From this, the impression at the time was that the bronchia were probably obstructed by false membrane; and it was this conviction which deterred us from urging the operation more strenuously. The absence of the respiratory murmur was evidently owing to the œdema of the glottis, and to the exudation in the larynx; and in this case, as well as the one first narrated, clearly shows the utter impracticability of arriving at any positive conclusion as to the exact condition of the bronchia in membranous croup.

“In regard to the cause of the disease in the last-mentioned case, there is

surely no good reason why the mere occurrence of a similar disease in several members of the same family should be referred to contagion. They all possessed the same character of constitution, and were exposed to like causes, and were therefore liable to the same ailments. These cases bore no analogy to the malignant sore throat which so often occurs during the prevalence of epidemic scarlet fever, and which not unfrequently extends to the larynx, and thus produces fatal croup; the laryngeal affection thus induced is of course quite as contagious as scarlet fever itself, since it forms but a part of a specific disease.

"But decidedly the most important question suggested by the history of the above cases is in reference to the operation of tracheotomy. Upon this subject, medical opinion is still unsettled—by some the operation being condemned under all circumstances, whilst by others it is advocated and urged prematurely. According to Trousseau, 'Il faut faire l'opération dès que nous avons acquis la certitude qu'il existe des fausses membranes dans le larynx;' and his reasons for thus urging an early resort to the operation are based upon the well-known facts that, at a later period of the disease, the exudation is more apt to extend into the bronchia, whilst at the same time the increased state of asphyxia, and the exhaustion consequent upon protracted treatment, would greatly tend to diminish the chances of the operation. All who are familiar with membranous croup are prepared to admit that, when once established, it is attended with great danger; but at the same time even the most desperate cases will occasionally recover under judicious medical treatment. Valliex states that in 26 out of 31 cases, treated chiefly by emetics, more or less false membrane was discharged; and that, of this number, 15, or nearly one-half, ultimately recovered; whilst, out of 22 cases treated without emetics, only 1 recovered.

"The success of the operation, in connection with the statement that tracheotomy, *per se*, is attended with no special danger, has been strongly urged in its favour. Bretonneau, out of 20 operations, had success in 6 cases; Velpeau saved 2 out of 10; and Trousseau, out of 112, had 27 recoveries—or about one-fourth of the whole number recovered. This success, however, is far beyond what has been attained in England, where, according to Dr. West, 'the result of almost every instance of the performance of tracheotomy in cases of croup has been so unfavourable that the operation is scarcely looked on as a justifiable proceeding.' These different results can only be reconciled by the fact that on the Continent the disease is most frequently confined to the larynx, whilst in England, as well as in this country, the trachea and bronchia are not unfrequently simultaneously involved. The number of cases of croup in which tracheotomy has been performed in the United States, is as yet too limited to enable us to arrive at any positive conclusions. Hitherto, it must be confessed, the operation has been viewed in this country with much distrust, owing, in a measure, to the unfavourable reports by British writers, and in part to the comparative want of success in the few cases in which it has been here performed. How important, then, is it that every case of tracheotomy for croup, whether successful or otherwise, should be placed on record, so that, in the end, we may be enabled to judge for ourselves as to the merits of this vexed question.

"Is it true that tracheotomy is, *per se*, unattended with danger? It is well known to the profession that the trachea has been repeatedly opened, for the extraction of foreign bodies, without giving rise to any untoward results; but, to say the least, it is exceedingly improbable that the short and plump neck of a child can be freely incised down to the trachea without endangering, in the least degree, the life of the patient, and more especially so in a case of croup, where the veins are enormously distended. And yet Trousseau has opened the trachea one hundred and twenty times without giving rise to any immediate bad effects; it remains, however, to be proved that the convulsions, copious hemorrhages, and frightful syncope, which so often follow this operation, have not had much to do with the unfavourable results which followed in three-fourths of these cases. In the instance which I have just narrated, the hemorrhage was severe, and without great dexterity and presence of mind on the part of the operator, the child would have perished in a few moments.

"If, then, it be true that even the most desperate cases of membranous croup

do occasionally recover under judicious medical treatment, and if, at the same time, it is quite impossible to ascertain, with any degree of certainty, either by the general or physical signs, the condition of the bronchial tubes, it appears difficult to resist the conclusion that an operation so severe and so hazardous should not be performed except as a *dernier resort*."

"Dr. ASHMEAD remarked that during his residence in Paris, last winter, he heard but little of this operation, except from Trousseau, its great advocate and supporter. He had seen two operations at the Children's Hospital, one by Trousseau, in which the patient recovered, and the other by Guersant, in which the patient died. In the latter, the operation was performed in the advanced stage of the disease, while in the former it was performed early. It was the practice of Trousseau to operate at an early period, and hence, probably, his success. In England, and in this country, the operation is not considered justifiable until after all medical means of cure have failed; and this may be one reason why the results differ so widely from those reported in France. He also heard it stated in Paris that the measure of success was much greater in private practice than in the hospitals.

"Dr. Ashmead had performed the operation twice himself. In one case, where it was strongly urged by the family, he had operated on an only child in an advanced stage of the disease. The immediate result was most gratifying: the distressing dyspnoea was relieved, and the child fell into a pleasant slumber. In a few hours, however, the bad symptoms returned, and the little patient soon sank away. The parents, who were at first delighted, now became exasperated at the doctor, and he was obliged to get out of the way to escape their vengeance.

"Dr. A. fully agreed with Dr. Pepper as to the impossibility of forming an accurate diagnosis of the state of the bronchial tubes by auscultation, and considered this one of the objections to the operation. He had made up his mind never to recommend tracheotomy, and only to perform it when strongly urged by those most interested, and then always with the full exposition of its dangers and uncertainty."

Peculiarities of the Sphenoid Bone.—"Dr. NEILL called the attention of the college to certain peculiarities of the sphenoid bone, not described by anatomical writers. In the description of the bone given in the books, we are told that the pterygoid processes project downwards perpendicularly, which may be the case in a large proportion of the skulls of the European races. If, however, we examine a variety of specimens, we find that the perpendicular direction of the pterygoid processes does not invariably prevail. Thus, in the African, they are very oblique, running nearly parallel with the oblique line of the face. In the Mexican skull they are very nearly vertical. There will very generally be found a parallelism between the direction of these processes and the line of the face. In the foetus they have the peculiar obliquity of the face; and in all races, the nearer the characteristics of the adult head approach those of the foetal will the direction of the pterygoid processes be found more oblique. Dr. Neill was not aware that the fact just stated had any important practical bearing; the direction of the pterygoid processes will, however, have some influence upon the direction of the posterior nares, of which it is important that the surgeon should be aware. The more oblique the processes, the more oblique will be the posterior nares, which follow, of course, the direction of the former."

Poisoning from eating Peach-kernels.—The following case of this was related by Dr. Keating:—

"On Tuesday, the 10th of September, I was sent for, in great haste, to visit the child of Mr. B. in Gaskill Street.

"Upon reaching the house, I found that a little girl, of three years of age, who, up to the moment when I was sent for, had enjoyed excellent health, had come in from playing with an older brother, and suddenly placing her hand on her head, fell on the floor perfectly senseless.

"When I saw the child, she was lying on the bed insensible; respiration slow, deep, and sobbing; no convulsion of the limbs, but a faint, flickering motion was observable about the muscles of the lips; hands and feet were icy

cold; eyes prominent, pupils dilated; pulse slow and feeble; finger nails of a livid colour, and the hands slightly clenched. My inquiries elicited nothing from the mother which could account for the extraordinary condition of the child. Despairing of obtaining any clue to the case, and as a dernier resort, I applied my face to the child's mouth, and immediately recognized in her breath a strong odour of prussic acid. The idea of peach-kernels immediately suggested itself to my mind; and, upon interrogating her brother, I found that, previous to her coming into the house, she had managed to snatch from him a large quantity of peach-kernels which he had been preparing for his mother's use. He also informed me that he saw her put a large quantity in her mouth at a time. Convinced, then, that I had to deal with a case of poisoning by prussic acid, I immediately had recourse to the proper treatment. I dashed a small pailful of water upon the child's head and spine, and in a few moments had the satisfaction of seeing her take a full respiration, and evince some signs of returning consciousness. I immediately administered an emetic, consisting of five grains of sulphate of zinc and ten of powdered ipecac.; this was followed by copious emesis, consisting of a large quantity of peach-kernels, emitting all the peculiar fragrance characteristic of prussic acid. Sinapisms were also applied to the spine and to the extremities, and after the vomiting had ceased, I ordered thirty drops of the aromatic spirits of ammonia in water, to be repeated every half hour. The child appearing much relieved, and consciousness having entirely returned, I left the house.

"Upon visiting my little patient two hours after, and finding that the pulse was full and rapid, face flushed, conjunctiva injected, and that she was complaining of violent pain in the head, I took about three ounces of blood from the arm, and ordered cold applications to the head and an enema for the bowels. When I returned again in the evening, all untoward symptoms had vanished, and the child was playing about, and apparently as well as ever.

"Upon testing the contents of the stomach with the liquor potassæ and a solution of the sulphate of iron, the Prussian blue was instantly precipitated in abundance. From the condition in which I found the child, I have every reason to believe that had not the proper remedies been promptly applied life would have soon become extinct.

"As it is important to be able to diagnosticate at once the difference of the symptoms consequent upon poisoning by opium and prussic acid, I will enumerate those points which struck me most forcibly in this case.

"In the first place, the history of the case affords us a means of distinction, the rapidity with which the effects supervened, the rapidity with which the case terminated, and then the absence of blueness in the skin, and of the slow, full pulse.

"It may seem strange that an article which is so generally used, and of which, consequently, children must be constantly partaking, should so seldom manifest such serious consequences. In answer to this, we would suggest that the quantity eaten in this case was unusually large, and that as the peaches were exceedingly acid, it may be that the kernels contained an unusual quantity of the acid; or perhaps the child may have had some idiosyncrasy, by which she was peculiarly liable to the poisonous effects of the acid, even in the minutest quantity. Moreover, it is a question of much importance whether, perhaps during the summer months, numbers of children may not have succumbed to the fatal effects of this acid, without their real condition ever having been suspected. The accumulative effects of this poison have been generally denied; the rapidity with which death supervenes generally depends upon the quantity taken; it is generally thought, however, if a person live forty minutes after the poison has been swallowed, that the danger is over.

"It would be well for medical men to recollect that the bitter almond, cherry laurel, bird cherry, peach, the leaves and seeds of the nectarine and apricot, and the seeds of the plum and cherry, all contain some of this acid.

"Parents, then, should keep a strict watch over their children, for it is an admitted fact that half of the deaths of childhood occur from the kind and quantity of ingesta; and hence the mouth not only forms the avenue through

which the life-giving principle is received, but is also, unfortunately, the portal through which the fell destroyer most generally creeps in."

Appended to the number is the report by Dr. Bell of the standing committee on Public Hygiene. This is an elaborate and valuable paper on a subject the importance of which can hardly be overrated; one to which we have on several occasions endeavoured to draw attention, and on some future occasion shall again recur to it. At present, our limits will not allow us to do so, but we must now content ourselves with recommending the report of Dr. Bell to the consideration of the profession.

ART. XXVI.—*Woman; her Diseases and Remedies. A series of Letters to his Class.* By CHARLES D. MEIGS, M. D., etc. etc. Second edition, revised and enlarged. 8vo. pp. 690. Philadelphia, 1850: Lea & Blanchard.

IN this second edition of Dr. Meigs' well-known and truly original work on the pathology and therapeutics of the female, some important additions have been introduced, and some judicious amendments made. There is much in these letters that is valuable; the practical observations of one who has been so long and so extensively engaged in the active duties of his profession cannot fail to interest and to instruct, not merely the student but the practitioner. There are, it is true, portions of the work which we were in hopes would have been omitted in this edition—but as the author has thought proper to retain them, however much we may regret it as a matter of taste, we have certainly no legitimate right to complain. The parts alluded to are, however, objectionable only in regard to style, and from the fact that they are, in our opinion, altogether out of place in a grave didactic treatise on the diseases of woman, intended mainly for the instruction of the student and young physician. It is true, we cannot always agree with the physiological and pathological views of the author—ingenious as these must be confessed to be, and enforced as they often are by a most plausible series of illustration and an almost irresistible earnestness of exposition. The soundness of the practical directions of Dr. M., generally speaking, we most cheerfully acknowledge. We must point, however, to one instance in which we believe his therapeutical directions are calculated to mislead, and that is in reference to puerperal fever. The true pathology of puerperal fever is as yet far from being settled—cases, we know, do occur of so decidedly an inflammatory character as to call for the prompt and copious detraction of blood, and by which, in its early period, the disease will, in the majority of cases, be cut short. Had Dr. M. confined his remarks strictly to this form of the fever, we should have come to dispute their correctness; but, if we understood him aright, he considers early and copious blood-letting as the remedy mainly to be depended upon in all cases of puerperal fever. Now there certainly have been epidemics or rather endemics of this disease, in which no indications warranting a resort to were present, and the cases in which blood was drawn at the commencement of the attack invariably terminated fatally. Under the general denomination of puerperal fever, we believe that there have been included diseases differing from each other somewhat widely in their pathological character, and each demanding a different treatment.

With all its faults—real or presumed—the work of Dr. M. is certainly calculated to impart valuable instruction to the student, and cannot be consulted even by the practitioner without profit.

D. F. C.

ART. XXVII.—*Practical Ventilation, as applied to Public, Domestic, and Agricultural Structures, being an Elucidation of Plans and Suggestions, of easy application, for ventilating every Species of Architectural Structure, with Remarks on Heating, Construction of Fire-places, Cure of Smoky Chimneys; and an Appendix on the Ventilation of Ships, Steamboats, and Railway Carriages.* By ROBERT SCOTT BURN, Engineer. London and Edinburgh, 1850. 12mo. pp. 208. *Useful Hints on Ventilation; explanatory of its Leading Principles, and designed to facilitate their Application to all kinds of Buildings.* By W. WALKER, Engineer. 12mo. pp. 131. London, 1850.

THESE are highly useful treatises, written by competent persons. The subject of ventilation is one of vital importance, and the best means of accomplishing it, under various circumstances, must constitute one of the chief studies of all who are interested in promoting sanitary reform. The main objects sought to be accomplished have been ably pointed out by members of the medical profession, who are, of course, the first to recognize the evils flowing from want of the means of getting rid of foul air, and of efficient methods for supplying fresh air. Intelligent architects and engineers have exercised their ingenuity in devising and perfecting plans for these purposes, and the two little works named at the head of this article, with their accompanying drafts and sketches, are valuable contributions to the subject.

Many years have elapsed since it has been demonstrated that the inhalation of the impure air which had been previously expelled from the lungs exerted a most deleterious effect upon living beings subjected to its influence: still it has been only quite recently that the importance of getting rid of foul air, and securing a free supply of fresh air in dwellings, and houses of every description, has been fully recognized. It cannot be too generally made known that the supply of pure air to the lungs conduces not only to the proper health of the body, but to the best performance of the mental faculties. The brain and other nervous centres from which emanate thought and motion cannot communicate to the great functions of life the highest measure of energy and activity adapting them to the performance of their happiest efforts, if supplied with dark and partially decarbonized blood. When even temporary exposure to impure air is fraught, as we know it is, with so much inconvenience and distress, what must be the measure of permanent disability and real disease resulting from protracted exposure of living beings in too small or too crowded houses, shops, manufactories, ships, prisons, work-houses, hospitals, &c. The answer has been often given in the history of plagues, in all ages, and in the modern bills of mortality, and though less conspicuously, not less certainly in the hereditary diseases, and susceptibilities, and malformations so common in every crowded population. Admirable reports have been made within a few years to the British Parliament, by committees appointed to investigate the sanitary condition of large towns, who have made appalling statements of the mischievous effects arising from imperfect ventilation. Individuals have added their efforts, and by such combined means the English public have become enlightened, and the aid of practically scientific men has been called into requisition, to devise the best plans for removing evils under which the human family has so long suffered. Legislative action has given a great impetus to the movement, by granting the necessary authority to open blind courts and narrow alleys, and to lessen the density of population in some cases where this could be effected. Philanthropists have been shown that they might lend those efforts, so promptly bestowed upon alleviating the condition of the impoverished sick and infirm, by showing how their dwellings might be improved and disease prevented.

G. E.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Structure of the Muscular Substance of the Heart.*—The following important observation is by REMAK. The facts observed by him are best seen in the thin muscular layers which can be procured, especially in sheep, from the commencement of the great veins of the neck or the pulmonary veins. Two sets of muscular fibres can be distinguished; some which run parallel, and others which are between these and interlace, connecting the adjoining parallel fibres to each other. The network formed by the connecting or intermediate fibres differs in complexity in the different parts of the heart, auricles, ventricles, &c. Sometimes, instead of these intermediate connecting fibres, the sides of two parallel running fibres approach and fuse into each other (*eine partielle Verschmelzung der Ränder zweier Hauptfasern*). The intermediate fibres are often much smaller than the parallel, and of variable strength; occasionally, as in the ventricles, they are as large as the parallel fibres; it is then very difficult to make out the arrangement; yet in no place, either in the auricle or ventricle, is this arrangement wanting. This observation of Remak's has been confirmed in Wurtzburg by Virchow.—*Med. Times*, Sept. 7, from *Müller's Archiv.*, 1850. No. II.

2. *The Terminations of the Olfactory Nerve.*—Dr. HOM describes the terminations of the olfactory nerves as being easily seen by taking a piece of a frog's nasal mucous membrane, placing it between glass, and examining it with a power of from + 216 to + 300. The extremities of the nerve-fibres, sometimes dilated and forming club-shaped processes, can be seen at their extremities, winding round and sometimes returning to the parent branch. Besides these, other nerves with broad diameters are seen passing in various directions, and present the characters of fine cerebral fibres.—*Med. Times*, Sept. 7, from *Müller's Archiv.*, 1850. No. II.

3. *On the Structure and Physiological Uses of Peyer's Glands.* By ERNEST BRÜCKE.—In the autumn of 1849, Brücke made some attempts to inject the most minute lymphatics of the bowels, by forcing oil of turpentine, coloured with alkanet root, into a portion of the intestinal tube of the cat. After the pressure on the piston of the syringe had been for a short time maintained, he observed that some of the lymphatics of the mesentery became filled, and that the coloured oil passed through the so-called *pancreas asellii*; and finally reached the *receptaculum chyli* and thoracic duct. On more minute examination, it was found that the only trunks of the lymphatic system injected were those which took their origin from the neighbourhood of the glands of Peyer. These trunks were formed by the union of minute arborescent branches, which obviously ran on the surface of the bowel, and whose finest twigs proceeded from

the glandular patches. A reddish tinge was distinguishable in the interior of some of the small glands, but was more distinct in the narrow interstices between them. Brücke supposed that by distending the cavity of the bowel, he had succeeded in rupturing the capsules of Peyer's glands, and that the injection had, through these breaches, passed into the lymphatics. This view was confirmed by other experiments, in which a column of fluid was substituted for the injecting syringe. There was no extravasation; and the uniform way in which the injection ran, commencing in a reddish point in the gland, and then proceeding by minute channels to form an arborescent network, terminating in trunks, which proceeded through the mesentery, seemed to indicate that the fluid passed by natural canals. The success of these injections suggested the inquiry, how far the glands of Peyer resembled lymphatic glands. Brücke was aware of the views on the structure of lymphatics held by Professors Ludwig and Noll, of Zurich, which the former had shortly before communicated to him. "Each vas inferens," writes Ludwig, "before entering a gland divides into numerous small twigs, each of which, on piercing the *membrana propria* of the gland, loses its coats, and pours its contents into the cavity of the gland, which is traversed with delicate and incomplete septa of fibrous tissue, and filled with all kinds of lymph-corpuscles. The vas efferens is formed in like manner by the reunion of minute twigs." On examining Peyer's glands, Brücke found great numbers of lymph-corpuscles, cytoblasts and cells, undistinguishable from the contents of ordinary lymphatic glands. It remained to trace, with the assistance of the microscope, the supposed connection of Peyer's glands with the lymphatic system. He found that many of these glandules presented, on their side next the peritoneum, a prolongation, ending in a delicate bundle of fibrous tissue, attached to the capsule of the gland. These bundles, after the addition of acetic acid, were seen to contain dark nuclei, similar to those observed in the glands themselves. No trace of a vessel was seen within the bundles, unless the fibres themselves were arranged so as to form a sort of tube. Brücke points out that similar bundles of fibres are connected with the villi, and argues that they must be the channels by which the lymph is conveyed from the villi to the trunks of the lymphatic system. Whether each bundle forms a conduit for the chyle, or whether the fluid insinuates itself between the individual fibres, drawing along with it the nucleated and fatty elements of the chyle, may admit of question. Brücke thinks that the whole so-called "submucous tissue" consists of these bundles and connecting fibres, with nothing in the shape of a vessel, except the blood passages.

He concludes his very interesting memoir as follows:—"It is ascertained, 1. That the chyle ducts may be injected through the glands of Peyer, and that observation of the course followed by the fluid injected proves that it passes in natural and not in forced channels. 2. That the cytoblasts which fill Peyer's glands are like those in the mesenteric glands; and during resorption form cells resembling the lymph-corpuscles. 3. That Peyer's glands are connected with thread-like structures, resembling those proceeding from the villi, and constituting the passages for the chyle; for in the submucous tissue nothing else which could serve such a purpose has been detected; and a system of vessels, proceeding from sources so numerous as the villi, and of course containing such a mass of fluid, could not have escaped observations such as have been recently made.

"The opinion which I pronounce, that Peyer's glands are lymphatic glands, situated in the wall of the intestine, and destined to elaborate the first organized elements of the chyle, may be erroneous; for almost all physiological conclusions, founded upon morphological investigations, attended with great difficulties, and not satisfying all conditions of inquiry, may lead to error; but I consider that the extent and the results of my inquiries have been such that I am entitled to submit an opinion, upon the correctness of which other observers may decide."—*Month. Journ. of Med. Sci.* Nov., 1850, from *Ueber den Bau und die Physiologische Bedeutung der Peyerischen Drüsen. Von Ernest Brücke. Wien, 1850.*

4. *Of Repair and the Imperfections or Limitations of Cure.*—DR. WILLIAM ADDISON, in an interesting paper "On the Containing-texture of the Blood," makes the following important remarks relative to repair of injuries in the organism:—

"The characteristic pittings of small-pox, and the analogous marks which may be found remaining after a severe application of antimonial ointment to the skin, not only point out upon what texture the morbid action has been concentrated, but they indicate—as do the scars and seams of a burn—that the parenchyma of the glandulæ is not restored or reconstructed by the process of repair, which fills the void, not by restoring the destroyed or lost form, but with simple fibrous tissue. Pathological anatomy has long demonstrated analogous facts in the mucous membranes; and it appears from our observations in these and other examples of repair or cure, where an original or germ-form has been destroyed, that, with the original form and substance, *the principle* governing the natural distribution of the blood-vessels has also departed; for the arrangement or disposition of these in a scar or a cicatrix, in granulations and lymph, appears to us never to be the same as it was in the unimpaired original growth. Such being the facts, we have, in these instances at least, no evidence of a repetition or revival of the 'germ force.' On the contrary, we see only effects arising from those qualities of blood which, wherever blood extends, originate a limiting or bounding texture, a correlative of blood, the first phase of which is *corpuscular*, and the concluded form *fibrous*. These imperfections or limitations of cure in the skin may be of little consequence to the welfare of the person; but in mucous membranes and internal organs they become of much more importance: and allied to these in their consequences upon the general or constitutional health are the unnatural fibrous adhesions which very frequently attend the cure of severe inflammation on the free surfaces of fibrous membranes. But we have elsewhere spoken at length upon this part of our subject,* and are, therefore, content with the following summary:—

"The first phenomenon of repair is inflammation, cells, and cell-growth interpolating fibrous texture. The second phenomenon of repair is the cure of inflammation; natural fibrous forms abolish and exclude the cell-growth period. But there is often a pause between these two periods. Inflammation subsides, but cure does not advance: unnatural cell-growths maintain their footing, but they do not spread. *This is scrofulous disease*—a persistent form of retrograde metamorphosis.

"Finally, the human body, regarded *analytically*, is composed of three great systems of organs—sentient, motor, and secreting—nourished by the circulation of the blood, and sustained by the coherency of textures, correlatives of blood. In this point of view we have sought to determine the seat of inflammation, and to extricate its definitive phenomena from their complications with the elements and physiology of the parenchymatous substances. Desirable as this is on many grounds, particularly as interpreting pathological appearances, we must remember that analytical views are unsatisfactory in the practical treatment of disease; because, in the first place, such is the minuteness of the scale upon which different physiological substances commingle and are co-ordinated, that there are everywhere in the living structure, *and within microscopic areas*, elements of the common and of the specific: so that if disease fundamentally begin in the one, it affects the other before it can become an object of practical interest or regard: and in the second place, *synthetically* viewed, all the various elements of the living body are so mutually incorporated and interdependent, that the whole of them form but one person. Look at the relations between *sentient* and *motor* elements. Muscles act instantaneously upon the dictates of the will; but disturb sentient matter, and muscles are divorced from the dominion of the will; they remain quiescent, and waste away. Are not muscles, then, exquisitely sensitive? *Sentient* and *motor* elements are both incorporated with the simple fibres of the *fibrous tissues*, and immediately feel the influence of the first inroads of inflammation. In the deep interior of the brain *sentient elements* are brought into such close and mysterious relations with the *elements of blood*, that the ordinary form and character of the limiting tissue of the blood is dispensed with, a kind of embryonic type of circulation here prevailing. Blood and medullary matter seem in this instance to have nothing interposed between them. In the *secreting organs, and within micro-*

* Healthy and Diseased Structure, part ii., ch. 2.

scopic areas, multitudes of the *secreting cell-particles* are attached to the *containing texture of the blood*; and in the liver the same continuous relations are thought by the best anatomists to prevail between the *secreting elements* and the *venous blood*, as appear to exist in the brain between *sentient elements* and *arterial blood*. It is these synthetical relations which prove to us how dependent every part of the body is upon the circulation of blood, and deprive analytical investigations of the extensive influence which otherwise they must have had upon the art of therapeutics. In the embryo, *germ-masses* or groups of sentient, motor, and secreting elements are founded prior to the flowing of the blood current, but the growth of blood-vessels, of fibrous textures and bones, upon which the relations of forms and functions depend, is posterior to the circulation; and the healthy constitution of these textures hinges upon a normal metamorphosis of the elements of blood. Such being the facts, what, then, replenishes and maintains the circulating fluid?

"In answering this question, we enter upon another and a widely different sphere.

"Food, drink, and air, incorporate with blood. Here we pass from the department of the living body to the world of external nature: and it is to be observed that the elements of the one cannot be said to be *more necessary* to the *phenomena* of life and health than are those of the other; for the body dies as soon deprived of air as it does deprived of blood."—*Lond. Med. Gaz.*, Sept. 20th, 1850.

ORGANIC CHEMISTRY.

5. *On the Salts contained in Cholera Evacuations.* By Dr. GUTERBOCK.—The following are the author's conclusions, drawn from the chemical examination of the stools in cholera:—

1. A most remarkable circumstance is the large proportion of water, amounting, on an average, to 98.119; while, according to Berzelius, normal stools contain 75.3. The specific gravity, too, is remarkably low, varying from 1006 to 1008; the urine itself, in but few diseases, manifesting so low a one.
2. The solid constituents amount on an average to but 1.581.
3. Among these, the inorganic *salts* constitute by far the largest portion—upon an average 45ths, the organic matter being only 1-5th—a proportion that is the reverse of the normal, in which the organic parts form 19-20ths according to Berzelius, and 9-10ths according to Rose.
4. Among these salts the most remarkable is the *chloride of sodium*, constituting, upon an average, nearly $\frac{1}{2}$, and, in some cases, 2-3ds, of the whole. The cholera stools contain nearly $\frac{1}{2}$ per cent. on an average, while, according to Berzelius, the normal proportion is but 0.28; and according to the latest analysis of solid excrement, by Rose and Fleitmann, this proportion is even unusually large, as in 100 parts of the entire salts, only 1-58th were chloride of sodium. Thus the cholera stools contain a hundred times as much salt as the normal; and, indeed, so considerable is the quantity that, after the evaporation of the fluid, the unassisted eye recognizes the characteristic crystals.
5. Next to this the *carbonate soda* is most abundant, and besides these are some phosphate of magnesia and lime, and a trace of the sulphate. The absence of *potass* in the stools is remarkable, forming, as it does, a chief saline constituent in the normal solid stools. According to Rose and Fleitmann, these contain 22.49 per cent., while in the cholera stool only a trace is detectible.
6. The organic matters of cholera stools consist in great part of mucus and the remains of epithelium, and it has generally been believed that they are rich in albumen. The experiments of the author and of Corenwinder contradict this, for they either found it entirely absent, or mere traces present. Masselot (*Gaz. Méd.*, No. 14, 1849) states that he found a considerable quantity; but as the stools were compared to soup in colour they probably contained blood—an important point to be borne in mind during investigations for albumen. In almost all cases a small quantity of casein is present, especially in stools removed after death.
7. The abdominal discharges were always alkaline, but the *vomits*

neutral, or slightly acid. These latter, too, contained a still larger proportion of water, viz., 99 per cent., and were little above the specific gravity of water. Upon an average, the salts constituted about a half of the solid matter, but the proportion between these and the organic constituents was not so constant as in the alvine evacuations. So also the proportion of chloride of sodium varied, but it never exceeded that of the other salts. No albumen was present. 8. The contents of the bowel thus appear to become changed in their passage, not only by the presence of broken epithelial scales, but also in chemical composition, being richer in organic constituents than when they have passed the anus. 9. It is to be expected that the increase of chloride of sodium in the stools is cotemporary with the diminution of the substance in the blood noticed by O'Shaugnessy, Rayer, and Mulder; but the cessation of the epidemic prevented Dr. Güterbock examining this point for himself. Supposing future researches to affirm it, it is only one step towards explaining an increase, which, compared with Rose's analysis of normal excrement, is a hundredfold. According to this chemist, a large portion of the chloride of sodium is excreted in the urine, almost 600 times as much as in the stools; and the arrest of the secretion of urine during cholera may explain the enormous increase in the stools.—*Brit. and For. Med.-Chir. Rev.*, Oct. 1850, from *Poggendorf's Annalen*, Bd. lxxix.

6. *Influence of Salt Diet on the Composition of the Blood.*—POGGIALE has examined the blood of man, both at the time that the usual diet was taken, and whilst 154 grs. of salt were consumed daily. The following are the results:—

	During usual diet.	During salt diet.
Water	779.9	767.6
Blood-corpuscles	130.1	143.0
Albumen	77.4	74.0
Fibrin	2.1	2.3
Fatty matters	1.1	1.3
Extractive and salts	9.3	11.8

From which it is evident that the proportion of solid constituents are increased; this occurs chiefly in the blood-corpuscles and extractive, the amount of albumen being slightly diminished.—*Compt. Rendus*, xxv.

BOUSSINGAULT has also extended his observations concerning the influence of salt on the fattening of cattle. His earlier experiments had shown that salt does not exert that beneficial influence on the growth of cattle, and the production of flesh, which is usually ascribed to it. His present experiments have been extended over a period of thirteen months, and have been made on a number of steers, some of which had their rations salted, while the other had not; in other respects they were treated in a precisely similar manner. The results have shown that the increase in the proportion of flesh does not pay for the salt employed. Boussingault, however, remarks that a saline diet exerts a beneficial effect on the appearance and condition of the animals; for the steers which were deprived of salt for eleven months appeared sluggish, and of a languid temperament; their coats were rough, devoid of gloss, and partially bare: while those which had been fed with salt were lively, had a fine glossy coat, and were sure to obtain a considerable higher price at market.—*Brit. and For. Med.-Chirurg. Rev.*, from *Liebig's Report*, vol ii.

MATERIA MEDICA AND PHARMACY.

7. *On the Action of Bromide of Potassium.*—M. HUETTE has been induced, by reason of the analogy in composition which this substance offers to iodide of potassium, and by the recommendation by a few practitioners of its therapeutical employment, to try a series of experiments with it. These have resulted in complete disappointment; but during his investigation he discovered two effects producible by the bromide, which, if confirmed on farther trials, may

admit of useful application. One of these is the power it possesses, even when given in small doses, of inducing a state of *insensibility of the palate and pharynx*, which, commencing on the second day, continues during the whole course of treatment. It is so complete that the finger may be carried to the base of the tongue, touch the amygdalæ and posterior nares, or tickle the uvula, without inducing any effort at vomiting or deglutition whatever. This local anæsthesia seems deserving of investigation, as being preferable to that derivable from chloroform, when tedious and delicate operations about the mouth and throat are in question. Still other investigations are required; for, on the one hand, the insensibility might not subsist under the action of a cutting instrument, and on the other perhaps the glottis itself is involved in a like insensibility, and would not indicate the passage of blood into the trachea.

The bromide possesses also remarkable power in inducing *torpidity of the genital organs*. A patient tormented by a vivid imagination, and subject to frequent consequent pollutions, found himself quite freed from his infirmity after having taken 15 grains *per diem* for three days; while some patients to whom the drug was administered reproached the author with this effect, which however passes off in a few days after the discontinuance of the medicine. The medicine thus seems indicated in *chordee*, in relieving which camphor and opium so often fail, as also in certain forms of spermatorrhœa.—*Brit. and For. Med-Chir. Rev.*, Oct. 1850, from *Gazette Méd. de Paris*, No. 23.

8. *On the Therapeutical Employment of Coffee and Caffeine*. By MM. VANDEN-CORPUT and HANNON.—M. Vanden-Corput has recently published an article upon the febrifuge power of coffee, and especially its anti-neuralgic action, on which account it is now very much employed by the Belgian practitioners. Numerous therapeutical applications of this substance were made long since. Nebelius and Baglivi gave it in cephalalgia, Dufour prescribed it in phthisis and migraine. Willis employed it in narcotic poisoning; and Grindel and Dorpat as a febrifuge. Musgrave, Pringle, Monin, Percival, Laennec, and a great many others, have spoken of it approvingly in essential asthma. In Dutch Batavia it is used in strong infusion, with lemon-juice, in pernicious fevers; and the practice passing thence to Holland, has led to its being preferred there to quinine. Pouqueville declares it is infallible in the intermittents of the Morea; and Martin-Solon approves of its use in the adynamic form of typhoid. Dr. Guyot has recently strongly recommended it in pertussis. Besides medicinal properties, properly so called, it possesses the important one of disguising the taste of various substances, especially quinine, sulph. magnesia and senna; and if its antiperiodic virtues really exist, it will probably favour the action of quinine instead of impairing it, as has been feared by some. It possesses the power, too, of developing the action of *haschisch*, contradictory as this may seem to its generally acknowledged anti-narcotic properties.

With *Caffeine*, prepared according to Liebig's process, M. Vanden-Corput produces various compounds. Thus the *citrate*, which is very soluble in water, is formed by saturating pure caffeine in a solution of citric acid, and evaporating; or it may be procured by exhausting crude coffee with a very weak solution of citric acid, shaking the liquor with an equal volume of ether, decanting it, and leaving it to crystallize after concentration. Twelve grains are added to 450 grains of sugar, and the mixture given in doses of 12 grains. The *lactate* may be prepared by dissolving caffeine in dilute lactic acid and evaporating, or by treating the infusion of green coffee with lactate of lime, filtering and evaporating. It may be given in sugar. The *malate* may be prepared in an analogous manner, and administered as a syrup by dissolving 4 parts of the malate in 30 of orange-flower water, and adding to it 250 of simple syrup. Caffeine may also be given with *hydrochloric acid*, as in the following formula: Caffeine 7 grains, distilled water 1350 grains, strong hydrochloric acid 2 drops, syrup 255 grains. Dose. a tablespoonful.

M. Hannon speaks in the highest terms of the employment of the *citrate of caffeine in idiopathic migraine*. Ten grains are first made into as many pills, one of which is given every hour for some time before the paroxysm. The dose is gradually increased until relief is obtained; and in one case even half a

drachm at a time was given. The dose must, indeed, be large, in proportion to the obstinacy of the case and the length of time between the paroxysms. Large doses are also required in old, feeble, or cachectic patients; and in old cases the medicine must be long continued. It is desirable, when possible, to commence the medicine the evening before the expected paroxysm, when the entire quantity may be divided into several doses; but if it has been delayed until the commencement of the paroxysm, the whole quantity must then be given at once. The expected paroxysm may thus be entirely arrested or merely diminished in severity; but in all cases, save where the disease is sympathetic, it eventually yields.

While upon the subject of *migraine*, we may mention a still pleasanter remedy than coffee, suggested by M. Tavignot, viz., the making several *deep inspirations* in rapid succession. We must observe, however, that M. Tavignot does not understand by the term *migraine* simple neuralgia of the head, which many writers so designate; but the condition when this is accompanied by a state of physical and moral prostration, during which the blackest ideas assail the patient—the “blue devils,” in fact, to which the English were once thought on the continent to be especially liable. During an attack of this, which from former experience he was led to believe would continue for twenty-four hours, he was induced by the hope that this condition of the nervous centres might result from a stasis of the blood in the sinuses of the brain, or from imperfect hematoxis, to take several deep and rapid inspirations; and after a few efforts of this kind, he found himself completely relieved, and able to resume his occupations. Other persons, similarly affected, have been in like manner relieved; but those who have tried the plan in simple neuralgia have been disappointed.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1850, from *Bulletin de Therap.*, vol. xxxviii.

9. *A cheap and simple article of Nourishment for Infants—Carrot Juice.* By Dr. GUMPRECHT of Hamburg.—Being impressed with the consideration that the nature of the artificial nourishment of young children deprived of the breast has a most important effect on their health, the author was anxious to find some aliment more supportable by the tender organism of infants than cow's milk and amylaceous matters, which mostly tend to acidity. An observation of Schmidtman, that the pulp of carrots is a favourite article of diet for young children in Turkey, and is much used there, led him to turn his attention to this substance, which, as is well known, from the analyses of Wackenröder and Liebig, is particularly rich in albumen and sugar. It contains, however, also a quantity of ligneous fibre (cellulose), which is indigestible, and may therefore prove injurious.

He therefore thought of employing the thickened juice of carrots in the following way: An ounce of finely-rasped carrot pulp is mixed with two cups of cold *soft* water, and left for twelve hours, during which it is occasionally stirred, then strained through a sieve, and the juice expressed from the pulp. This juice is then mixed with a sufficiency of bruised biscuit, or bruised crust of white bread, or a little arrowroot, a little sugar added, and the mixture heated, but not allowed to boil completely, so that the albuminous matter may not be coagulated. More sugar may be added if required.

The author considers the addition of biscuit or bread to be necessary, in order to furnish to the child all the requisite elements of nutrition—viz., albumen, starch, gluten, sugar, fat, and salts.

For sucklings deprived of the breast, the preparation is so far altered that the biscuit (1 part) is rubbed up with the carrot pulp (4 parts), then macerated and strained as above (we presume it is to be heated, though the author does not expressly say so). To this juice the requisite amount of sugar, and a little salt, are added, and the child fed with it from a sucking-bottle. Of course great cleanliness is requisite to prevent acidity being generated in the bottle, and for the same reason the juice, which readily undergoes fermentation, is to be kept in a very cool place, and prepared in small quantities at a time.

So far as the author's observations have gone, this system of nourishment has answered well, the children not only bearing it well, but taking the food

readily, and he has received assurances of similar success from several of his professional brethren.

It is further stated by him that for older children the carrot pulp may be mixed with animal broth, and that large carrots answer better for the preparation of the juice than those which are young and small.

From the want of any direct experience of the above method, we cannot as yet express a judgment on the above proposition; but we must admit that the manufacture of the food does not appear (as the author seems to think) so easy that we can always reckon on its being successfully prepared. The chances of fermentation in such a juice are so great that it is to be feared it will hardly be avoided. We should regard any tendency to laxity of the bowels—so common an affection of children—as a complete contra-indication to its use. Further, there seems to be no reason why, even for young infants, some animal matter should not be added, in the form of broth or yolk of egg.—*Schmidt's Jahrbücher*, from *Journ. für Kinderkrankheiten*, July and August 1849.

In the *Journal für Kinderkrankheiten* for March and April 1850, Dr. Gumprecht publishes letters from Dr. Müller, of Hamburg, Dr. Mauthner, of the Children's Hospital of Vienna, and Dr. Helmbrecht of Brunswick, who state that they have followed his plan with satisfactory results. The last-named physician, however, remarks that if arrowroot is used to thicken the juice, it must be boiled, else the arrowroot will not dissolve, and this has the effect of coagulating the albuminous matter, which the author wishes to avoid. Dr. Helmbrecht suggests salep—a substance which is little used in this country, but which, we believe, is unjustly neglected.—*Monthly Journ. Med. Sci.*, Nov. 1850.

10. *On the Therapeutic Properties of Cedron.* By Dr. CAZENTRE.—The seeds of Cedron are employed, in Central America, as a remedy for the bites of serpents, for hydrophobia, and for intermittent fevers. The tree is of the size of an elm; it is of the family of cedars, and grows in the whole of Central America, but most abundantly in the neighbourhood of Carthagená. The seeds nearly resemble a large bean; they are inclosed in a matty, thick, ovoid drupe, of the size of a lemon. When fresh, these seeds contain an oily matter. The whitish farina which is obtained from them is extremely bitter; the bitterness is more lasting and disagreeable than that of sulphate of quinine. The following are the purposes to which they are applied.

1. BITES OF VENOMOUS REPTILES. The seeds of Cedron are the most powerful antidote known against the bites of the most dangerous serpents; the remedy is said to be infallible, if immediately applied. The natives of the country where it grows always carry some of it with them when they go into districts infested with reptiles; hence fatal accidents are seldom heard of, although bites must be frequent.

Mode of Administration. Three or four seeds are scraped and the farina is collected in a spoon, mixed with a little water or spirits, and immediately swallowed. Some of the powder, prepared in the same manner, is then applied to the wound, and covered with a piece of linen. The natives act more simply, by mixing up the grated seed, in the palm of the hand, with saliva, and swallowing it; they then immediately mix more, and apply it to the wound. A tincture, of rapid and certain effect, is also prepared by macerating the seeds in brandy. The first dose is often sufficient; but, generally, it must be repeated twice or three times, according to the severity of the bite, and the subtilty of the poison introduced.

2. INTERMITTENT FEVER. Cedron is frequently employed, at Panama, for this affection; and, in some localities, it is the only remedy used. Dr. Cazentre has often heard persons speak of having been cured by it of ague, which had resisted quinine. He recommends an inquiry into the efficacy of Cedron as a substitute for cinchona.

3. HYDROPHOBIA. Dr. Cazentre has been informed by persons that they had seen mad dogs cured by the administration of this remedy, and that a bitten animal would be preserved, if it were administered during the period of incubation. This subject Dr. Cazentre recommends to be also carefully investigated.—*Lond. Journ. Med.*, Nov. 1850, from *Journal des Connaiss. Med.-Chirurg.*, Oct. 1850.

11. *Hydro-Iodic Ether*.—It is now about twenty-five years since Gay-Lussac discovered hydro-iodic ether, yet this substance, though so volatile and rich in iodine, has never been employed medicinally. M. HUETTE thinks that it is a powerful remedy, and has performed numerous experiments for the purpose of determining its physiological effects. The mode of administration is simple. One or two scruples of the ether are introduced into a small bottle, and then covered with an extremely thin layer of water. The bottle is next applied to the nostril, and inspiration effected, the ether passing up through the aqueous covering. Fifteen or twenty inspirations are sufficient. Absorption takes place so rapidly that iodine may be discovered in the urine a quarter of an hour afterwards. The physiological effects are those of iodine in their highest degree; yet the author never experienced any other inconvenience, after numerous trials, than a slight coryza. It does not appear that M. Huette has made any clinical experiments with the hydro-iodic ether; but he has proved that it may be employed without any inconvenience, and analogy warrants us in recommending it to the notice of the physicians attached to the Brompton Hospital. (*Med. Times*, Sept. 14, 1850; abridged from *Gazette Médicale*, July 27.)

Mr. NUNNELEY's experiments on Hydro-iodic Ether (*Trans. of Prov. Assoc.* vol. xvi. pp. 204 and 315) suggest caution in the use of this substance. In eight experiments, six of the animals died; all, with one exception, some hours after the effects had apparently passed off, and even when insensibility had not been produced. Mr. Nunneley believes that, "whatever anæsthetic property it might possess, it never could be employed in practice." Additional experiments on the lower animals would be required before its administration to the human subject could be warranted.—*Lond. Journ. Med.*, Nov. 1850.

12. *Preparation of Atropine by means of Chloroform*.—At a meeting of the Academy of Sciences of Paris, on 14th October, M. Bussy presented a communication from M. RABOURDIN, druggist at Orleans, on the preparation of atropine by means of chloroform. The following is M. Rabourdin's process:—

Fresh belladonna, gathered when commencing to blossom, is bruised in a marble mortar, and the juice pressed out; the latter is then exposed to a temperature of from 176° to 194° Fahr., to coagulate the albumen, and filtered.

When the liquid is cold, four grammes (3i) of caustic potash, and thirty grammes (ʒvii and gr. xliij) of chloroform, are added to each litre (1½ pint); the whole is shaken for a minute and then set aside. At the end of half an hour, the chloroform, charged with atropine, is deposited, having the appearance of a greenish oil; the supernatant liquid is decanted off, and replaced by a little water. The water is successively added, and removed, till it becomes clear; the chloroform solution is then received into a tubular retort, and distilled by a sand-bath until all the chloroform has passed into the receiver. The residue is then treated with a little water, acidulated with sulphuric acid, which dissolves the atropine, leaving a green, resinoid matter; the solution, when filtered, is colourless. To obtain the atropine pure, it is sufficient to add carbonate of potass, slightly in excess, to collect the precipitate, and to dissolve it in rectified alcohol, from which, by evaporation, beautiful groups of needles of atropine are deposited.

When the fresh plant cannot be obtained, well-prepared extract of belladonna may be employed. Thirty grammes of extract of belladonna, obtained from the purified juice of the plant, are dissolved in one hundred grammes of distilled water. The solution is filtered; and two grammes of caustic potash, and fifteen grammes of chloroform, are added. The remainder of the process is analogous to that already described.

M. Rabourdin believes this method applicable, in general, to substances containing organic alkalies. If it do not become an economical means of preparing these products, it will at least serve, in some cases, to determine their proportion in certain materials.—*Lond. Journ. Med.*, Nov., from *Gaz. Méd. de Paris*, Oct. 19th, 1850.

13. *Cantharidal Ether, and some Vesicant Preparations of Cantharides*.—By leaving cantharides with a small quantity of sulphuric ether, a green liquid is

obtained, very rich in cantharidine, which easily combines with resins, fats, or collodion. M. OETTINGER, of Munich, proposes to employ this, in various forms, for producing vesication.

CANTHARIDAL ETHER. This is formed by digesting one part of coarsely-powdered cantharides in two parts of sulphuric ether, for three days, and expressing. The ether is charged with cantharidine, with a green oil, and with a yellow wax-like matter. When applied to the skin with a camel's-hair brush, the cantharidal ether produces abundant blisters, in one or two hours in children, and in three or four hours in adults.

CANTHARIDAL TAFFETAS AND PAPER. A double layer of aqueous solution of isinglass is spread on silk, or paper; when this is quite dry, the following is applied: Cantharidal ether, sulphuric ether, of each four parts; turpentine, colophony, of each one part. A brush dipped in this is passed over the prepared material twice, with a short interval between the applications, and always in the same direction. After twenty-four hours, a third layer is applied; and, at the end of a similar period, a fourth. After some days, a layer of isinglass is applied. At the time of application, a wet rag is passed over it to remove the gelatine.

CANTHARIDAL OINTMENT. This is prepared with equal parts of cantharidal ether and of lard. It acts intensely on children, after being rubbed in two or three times, and being applied for two hours.

CANTHARIDAL COLLODION. M. Oettinger prepares this by mixing equal parts of cantharidal ether and collodion.—*Lond. Journ. Med.*, Nov. 1850, from *Bulletin Générale de Therapeutique*, 30 Sept. 1850.

14. *Protection of Pills of Iodide of Iron from the Air.*—M. BLANCARD, in a memoir lately submitted to the Academy of Medicine in Paris, describes a process for the preservation of pills of iodine of iron, so as to prevent the iron from becoming peroxidized.

This process consists in covering the pills with a sort of varnish, made with an ethereal solution of balsam of Tolu, deprived of benzoic acid by digestion in water. The rationale of the process is founded on the volatility of ether, and on the insolubility in it of the substance which it is desired to protect.

The pills, thus prepared, are of a dark iron-gray, shining, and have no disagreeable smell or taste. When held in the mouth for some minutes, they give no evidence of the presence of a salt of iron. No iodine is disengaged. The commission, appointed by the Academy to report on the process, kept several hundreds in a bottle; the silver at the bottom of the stopper, which acted as a permanent test, had not changed colour at the end of several months. The pills contain a small excess of iron.

The commission reported favourably on M. Blancard's process; and it was resolved that his memoir should be published entire in the *Bulletin de l'Académie*.

M. BOUCHARDAT suggested that the pills might be rendered difficult of solution in the stomach. This might, however, be an advantage when it was desired that a medicine should reach more distant parts of the alimentary canal without being modified.—*Lond. Journ. Med.*, Nov., from *Gaz. Méd. de Paris*, Aug. 17, 1850.

15. *Neutral Citrate of Soda, a new Purgative suitable as a substitute for Saline Mineral Waters, the Citrate of Magnesia, Sulphate of Soda, of Potash, of Magnesia, &c.*—M. GUICHON, a pharmacist of Lyons, has suggested the use of the neutral citrate of soda as a substitute for the citrate of magnesia, and as being but half as costly.

This salt is white, without odour, often very slightly acid; it effervesces slightly on exposure to the air; it crystallizes in six-sided pyramids; its chemical formula is $\text{NaO}, \text{C}_4\text{H}_4\text{O}_4$.

Acid	-	-	-	-	-	49
Acid of sodium	-	-	-	-	-	26
Water	-	-	-	-	-	25

It is very easily preserved; an excess of acid diminishes very decidedly its purgative powers. Dr. PATTON, chief physician to the hospital of Antiquaille of Lyons, has experimented with it both in the state of a neutral salt simply dissolved in water, or in a demulcent drink, and in the state of a neutral salt very slightly acidulated and sweetened. Young subjects are purged by it in the dose of 40 grammes, and adults in the dose of 55 grammes. These experiments, which have been repeated by many physicians of Lyons, show that this new purgative possesses equal powers with the citrate of magnesia, and is much less costly.—*Revue Médicale de Paris*, 31st May, 1850.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

16. *On the Mechanism of the Inflammatory Process.* By ERNEST BRÜCKE.—On the retardation, and ultimately cessation, of the circulation in the capillaries of an inflamed part, the blood-corpuscles are known to accumulate in, and at length to completely fill and obstruct them. This phenomenon constitutes one of the most interesting points in connection with inflammation, and various explanations of the *modus operandi* of its occurrence have been advanced. Drs. C. J. B. Williams and Addison have attributed the inflammatory stasis to the multiplication and accumulation of the colourless corpuscles of the blood in the implicated capillaries. The merit of contesting and refuting the accuracy of this observation belongs to Dr. Hughes Bennett. It is now no longer possible to deny that the greater or smaller proportion of these corpuscles to the mass of the blood is entirely independent of inflammatory action. But though the correctness of this observation has been disproved, there can be still no doubt that at least some of the changes connected with the process can, with the aid of the microscope, be perfectly well examined, and that thus facts may be established which must be taken into account in all reasoning on the subject.

Henle has given the weight of his name to a theory which ascribes the diminished rapidity of the circulation, in the early stage of inflammation, to a primary dilatation of the capillaries and small veins. Brücke opposes this view; he holds this dilatation to be passive, and the consequence of a primary contraction of the arterial twigs supplying the affected part. Thomson had already signalized contraction of the arteries as the earliest change in the development of inflammation, but Brücke has been the first to deduce from this contraction the subsequent phenomena of the process. He has shown that the contraction lasts for a much longer period than was previously supposed, viz., for hours; a statement of the correctness of which we have convinced ourselves. The substance of Brücke's memoir is as follows:—

“On touching with liquid ammonia the web of a frog's foot, expanded under the microscope, an acceleration of the circulation is the first effect witnessed. This depends, in all probability, on an increase of the heart's contractions—as the frog, by its movements and efforts to escape, evinces other distinct signs of pain and suffering. During the movements of the animal, the circulation frequently becomes suddenly slower, and then just as suddenly resumes its rapid rate, which, as may be easily understood, is occasioned by the temporary compression of large vascular trunks. In a short time the animal becomes quiet, and the first signs of the inflammatory process appear, the circulation in the capillaries and small veins is seen to be diminished in rapidity, and these vessels contain more blood-corpuscles than usual. These two phenomena continue increasing, until at length the circulation in a portion of the capillary system, and in the small veins originating in it, entirely ceases, and the vessels are dilated and turgid with highly coloured red blood-corpuscles, so densely crowded that the outline of the single corpuscles can but rarely be distinguished. On examining the arteries supplying the part affected by the stasis, their ultimate twigs are frequently found to be already full of blood-corpuscles, which

are slowly but continually accumulating and filling the artery higher and higher.

"With each contraction of the heart, the blood advances somewhat in the vessels, but on its dilatation again recedes. Now, as the blood-corpuscles are heavier than the *liquor sanguinis*, they are less affected by the slow retrograde movement than by the rapid impulse forwards, and fresh corpuscles are in this way, as may be easily followed by the eye, constantly added to those already arrested. On examining more closely the artery in which the oscillations are perceived, its upper portion is found to be considerably narrowed, so that a single branch filled with blood-corpuscles is frequently larger than the stem from which it, together with many other branches, arises; in fact, if the arteries are measured with the glass micrometer before the experiment, at the point where they pass from the toes into the web, it is easily proved that the inner diameter of the artery, which feeds the implicated portion of the capillary vessels, is diminished to the half, indeed to a third, or even to a fourth, of its original size during the development of the stasis. I have often observed this condition of the narrowing of the arteries, and of the oscillation in them, in a completed stasis of from four to five hours' standing.

"Dilatation of the capillaries to double their diameter, and more, as some authors maintain, never occurs during the development of the stasis; it is only found when the inflammation has already existed for some time. The formation of the stasis cannot be accounted for by the dilatation of the capillaries; their dilatation is so slight that it is altogether denied by some observers, and, according to my observations, does not amount, at least during the development of the stasis, to more than a fourth of their original diameter.

"As regards the primary contraction of the arteries, it cannot be the effect of the elasticity of the arterial walls, for this would only occasion it if the pressure, which the blood exerts on them from within, should cease, and among the phenomena of the stasis we find none which could have such a consequence. The diminution of the calibre of the arteries must, therefore, be due to their contractile fibres; the anomalous condition in which, owing to the stasis, their twigs are placed, might be assigned as the cause of it; but, if this anomalous condition can excite contractions in the arteries, there is no good reason why it should not also be primarily excited by the originally employed irritant. It now remains to be seen whether the phenomena of the stasis may not be accounted for by the contraction of the arteries.

"If fluid be driven into a ramifying tube, it is clear that, on the occurrence of contraction of the trunk, other circumstances remaining the same, the rapidity of the current in the ramifications must be diminished. On viewing the circulation under the microscope, it appears that, in the normal condition, the blood courses onwards, in the whole capillary network, at a tolerably uniform rate—it is only in isolated and somewhat large vessels, which, as transitions from the arteries to the veins, are found interwoven in the capillary net, that the current is somewhat more rapid, the reason of which is obvious. Now, if an artery contract, this regularity in the distribution of the current, corresponding to the normal condition, and to the normal calibre of the arteries, must be disturbed in its vicinity; and it thus becomes clear, that not only a local retardation of the circulation, but also a local stasis, and even altered direction of the current in some vessels, may be caused by the contraction of a small artery.

"On the retardation of the circulation, the phenomenon which first shows itself—in fact, simultaneously with it—is the accumulation of the blood-corpuscles in the slower flowing blood. The corpuscles are specifically heavier than the *liquor sanguinis*, and are only kept suspended by the motion of the blood; the torrent of the blood bears them along with it through the capillaries; and it is often seen how they must turn and bend themselves to pass through their narrow and tortuous channels. If a stream, which bears along with it a specifically heavier body, diminishes in rapidity, the celerity of the solid body not only diminishes absolutely in the direction of the stream, but also relatively to the medium rapidity of the current; the solid body will sink, arrive in the slower moved layers, then be stilled, rolled onwards by starts in the bed of the

stream, and at last remain stationary. On considering that fresh blood is continually added to the vessels concerned, and that with the diminution of the velocity of the circulation the average celerity of the blood-corpuscles no longer bears the same relation to the average celerity of the *liquor sanguinis* as in a more rapid current, it becomes evident that with the increasing slowness of the circulation the blood-corpuscles are multiplied in the vessels, until at length they completely fill them, form on their part an additional obstacle to the circulation, and annul the last remains of it. This phenomenon may be compared to that which is observed in rivers, which choke their original bed with the sand they carry with them, and are forced to seek new passages to the sea.

"Lastly, it remains to be shown how the dilatation of the vessels in which the blood stagnates is produced. As the pressure which the blood exerts on the walls of the vessels depends on the resistance which it has still to overcome, so, in the normal circulation, the pressure decreases rapidly from the small arteries to the capillaries, and from the latter to the veins; in those vessels, however, in which the blood-corpuscles have accumulated, the resistance is manifestly increased, and, if they are completely obstructed at any spot, then they form from this upwards a blind appendage to the afferent vessels, in which the pressure is as great as at that point of the vessel whence the last branch, in which the blood still flows, is given off.

"I do not mean to assert that I have proved that all cases of stasis result from a contraction of the arteries; I even believe that I am acquainted with some which originate from other causes: thus much only I believe I have shown—viz., that the phenomena of the stasis can, at least, be as well and as completely accounted for by the contraction of the small arterial twigs as by a primary dilatation of the small veins and of the capillaries. If the phenomena connected with the occurrence of the stasis can be explained by the contraction of the arteries, it appears to me, when contraction of the arteries as well as stasis is observed on the application of any irritant, to be the most natural conclusion to consider the occurrence of the former as the immediate consequence of the irritation, and as the cause of the remaining phenomena; because the contraction of the walls of the arteries, in consequence of irritation, belongs to the well-established facts of physiology, and dispenses with every hypothesis which would attribute the dilatation of the veins and capillaries to direct or reflex paralysis of the nerves of the vessels."

Brücke has placed beyond doubt the fact of the contraction of arteries in the frog in the first stage of inflammation, and the persistence of such contraction for a considerable period. The inference he has drawn respecting the influence of this condition on the development of the stasis and the dilatation of the capillaries, are in the highest degree worthy of consideration; and his memoir must be esteemed an important contribution to pathology. If a certain condition, proved to exist in the lower animals, influences the formation of the inflammatory stasis in them, we are driven to the conclusion that the same condition would necessarily not be without effect in the production of the same phenomena in man and the higher animals, though in them not equally susceptible of ocular demonstration.—*Monthly Journal Med. Sci.*, Nov. 1850.

17. *Treatment of Typhoid Fever*.—M. BECQUEREL, Jr., has lately presented to the French Institute an important memoir on the Treatment of Typhoid Fever by sulphuret of mercury internally and frictions with mercurial ointment.

In the year 1847, M. Serres read at the Institut a series of papers on "The Nature and Treatment of Typhoid Fever," and proposed a new mode of treatment, which he considered likely to exercise a most beneficial influence on the progress and character of that disease. The mercurial treatment of M. Serres consisted in the internal use of the black sulphuret, in doses varying from twelve to sixty grains, and in frictions over the abdomen with common mercurial ointment, in quantities varying from half an ounce to one ounce daily.

This treatment was continued for ten or twelve days—even longer, until the prominent symptoms of the fever had given way.

Having been appointed to take charge of M. Serres' patients at La Pitie for

some time, M. Becquerel resolved on submitting the mercurial method to further experiment. He therefore made trial of it on fifteen patients affected with typhoid fever, abstaining, with some slight exceptions, from the use of any other remedy.

The black sulphuret of mercury was administered to each patient immediately on his admission; he began with thirty-two grains, in the form of pill or powder divided into five or six doses. If no improvement took place in two or three days, the dose was increased to forty-eight or even sixty-two grains. As soon as convalescence commenced, the remedy was discontinued. In no case was the salivation severe enough to render discontinuance of the mercury necessary.

The mercurial ointment was employed in the quantities recommended by M. Serres, being increased in such cases as demanded an increase of the sulphuret. Thus, with thirty-two grains of the sulphuret, sixteen scruples of mercurial ointment were employed in two frictions; and with sixty-four grains thirty scruples. In order to favour absorption, the abdomen was cleansed every day with soap.

The accessory remedies employed were—ice, Seltzer water, and lemonade as a drink; simple lavements, or, in cases of constipation, a laxative clyster.

In ataxic cases, of which four occurred, musk was administered as a stimulant to the extent of five or six grains a-day.

The following are the results of the practice: Fifteen patients, all labouring under typhoid fever in a severe form, were treated—ten men, five women. The men were aged, two, sixteen years; two, seventeen; two, eighteen; one, twenty; two, twenty-two; one, thirty-six years. The ages of the women were—fifteen, eighteen, twenty, and two of twenty-one years.

The male cases may be arranged as follow: Four labouring under the ordinary abdominal form; five presenting adynamic symptoms of a very severe nature; and one with ataxic fever, in which the delirium and agitation predominated.

Of the females, one was affected with the adynamic form; one with common typhoid fever; one with the ataxo-adynamic, and two with ataxic fever. Dating the commencement of the attack from the first appearance of a febrile movement, we find that two entered hospital on the second day; two on the fourth; seven on the fifth; three on the sixth; and one on the eighth day. The premonitory symptoms of headache, muscular depression, &c., had, besides, varied from three to twelve days before the regular febrile attack commenced.

The treatment was begun, in the fifteen cases, on the day after admission. The following were its principal effects:—

Febrile Movement.—The first few doses of the sulphuret, and a few frictions, diminished the heat and dryness of the skin, which in some cases became moist. The pulse, at the same time, constantly fell. It varied from eighty-four to one hundred and sixteen in the different cases, and in all the frequency was diminished by the third day.

Mouth.—The dry, rough condition of the tongue, and the blackness of the lips, never disappeared until salivation had set in. This latter occurred twelve times in the fifteen cases: it was absent twice; and in these two cases recovery was just as prompt as in the former. In the only fatal case, the tongue remained dry to the end of the disease. In every case but one, the salivation was slight; in the one excepted, the tongue and gums continued swollen for twelve days.

With respect to this effect, the following propositions appear to be established:—

1. In ordinary typhoid fever of moderate intensity, salivation occurs more quickly than in the other forms; it is more decided, and continues a little longer during the convalescence, of which it is usually the precursor.

2. In severer cases, the salivation occurs at a later period, and is less considerable; sometimes it takes place at the moment the febrile symptoms disappear, in other cases, a few days previously.

3. In the most dangerous cases it is very difficult to excite salivation, and,

until this takes place we have always to dread some accident. Great perseverance is therefore requisite.

4. Finally, in a few mild cases, salivation does not exist, the mercury appearing to master the disease in less doses than are necessary to stimulate the salivary glands.

Tympanitis.—In every case, except the fatal one, this symptom diminished with great rapidity, and that from the commencement of the treatment.

Bowels.—The mercury produced in two cases one or two fluid stools daily; in two others accompanied by constipation, it had no laxative effect, and lavements became necessary. In three cases of diarrhoea (five or six fluid stools a day), the looseness diminished in a remarkable manner as soon as the remedy was employed. In eight cases it had no effect whatever on the state of the bowels, neither augmenting nor diminishing the diarrhoea.

Rose Spots.—These spots, when situate on the abdomen, were invariably removed in twenty-four to thirty-six hours by the mercurial frictions; but they continued their course on the other parts to which mercury was not applied.

Delirium.—When this symptom was at all prominent (four cases), musk was given to the extent of five or six grains daily. Although so violent that the use of the straight-jacket had been necessary, these patients became calm in four or five days. As to the cough, chest symptoms and stupor, they followed the general course of the disease, and appear to have been modified in a secondary way only.

Duration of Treatment.—In four cases, the treatment was prolonged to seven days; in three cases, to eight days; in one, to nine days; in three, to ten days; in one, to twelve; in one, to fifteen; in one, to sixteen; in one, to seventeen days. The mean duration was, therefore, ten days.

The quantity of mercury employed was, on an average, twelve and a half scruples of the sulphuret, and two hundred scruples of mercurial ointment. The smallest quantity was seven scruples of the sulphuret, with one hundred and twelve scruples of ointment; the maximum, twenty-four scruples of the former and three hundred and sixty of the latter.

Duration of the Disease.—The mean duration of the disease in fifteen cases was sixteen days. In one case, the duration of the fever was twelve days; in two, thirteen days; in three, fourteen; in three, fifteen; in one, sixteen; in one, eighteen; in two, twenty days; in one, twenty-one days; and, in one, twenty-three.

From the above facts, M. Becquerel draws the following conclusions:—

The treatment of typhoid fever by the black sulphuret of mercury and mercurial frictions over the abdomen is attended by the most advantageous results. The effects are the more striking in proportion as the disease is treated at an early period. In fifteen cases, all of a severe nature, taken indiscriminately, only one death occurred, and that from perforation of the intestine. The duration of the disease also was unquestionably shortened by this method of treatment, for it varied from twelve to twenty-three days. The duration of the treatment varied from seven to seventeen days.

The following were the most remarkable effects of the remedy: Diminution of the force and frequency of the pulse, and of the heat of skin; *rapid and early disappearance of the typhoid eruption*; rapid removal, also, of the tympanitis; excitement in a great majority of the cases of salivation on the sixth to the thirteenth day, which is almost a certain sign that the treatment has succeeded and that the patient will recover. Combined with mercury, the musk was effectual in subduing rapidly the most severe ataxo-adyynamic symptoms.—*Med. Times*, Nov. 2, 1850.

18. *Treatment of Cardiac Dropsy.*—Dr. ALEXANDER KILGOUR, in an interesting paper on Disease of the Heart and the dropsy following, in the *Monthly Journal of Med. Sci.* (Sept. 1850), makes the following remarks on the treatment of the latter affection:—

“In the treatment of cardiac dropsy, every practitioner has his favourite remedy, taken from the class chiefly of diuretics or purgatives, or both. Of the former, I have found the following combination the most efficient. It pumps

the patient out, so to speak, sometimes in a few hours; and it often will do so in repeated attacks of the anasarca.

R.—Infusi digitalis, ℥iv; acetatis potassæ, ℥ij; spiritus ætheris nitrosi, ℥ij; aquæ cassiæ, ℥iss. Capiat cochleare magnum quartâ quâque horâ.

At last there comes an attack in which this and other diuretics cease to act, and we must then fall back on purgatives. Of the latter, unquestionably the most powerful is elaterium. But there surely must be a very great diversity in the strength of this medicine. Some practitioners, from the days of Sydenham, and long before him, downwards, appear to have given it in the dose of two grains, or even more; but I have found a single pill, according to the following formula, generally very powerful:—

R.—Elaterii, gr. j; extracti colocynthidis comp. ℥ij. ss; extracti hyoscyami, gr. xij. M. Divide in pilulas xij. Capiat unam nocte manequæ.

The great objection to the elaterium is the intense sickness, even in this small dose, produced by it. Do the large doses produce less sickness than the smaller? It may be so; but, in the few instances in which I have tried large doses, the sickness was not less. Is there any mode by which this sickening property in this valuable medicine could be removed? The same effect was found by the ancients in the well-known and much-used, but undeservedly now almost discarded, hellebore; and for the sickness occasioned by it we find it recommended (*vide* “Oribasius,” lib. viii. cap. v.) that, amongst other remedies, the patient should be entertained with a funny little story, or be tossed, like Sancho Panza, in a blanket.* Something more efficient than the former, and less disturbing than the latter, would be a desideratum.

It is the opinion of some that the elaterium acts as a diuretic, as well as a hydragogue cathartic. I remember, when in consultation with Dr. Adams, of Banchoory, in a case of cardiac dropsy, having my attention called by him to a formula, where the elaterium was combined with a diuretic, which he had seen prescribed with very great success. I detected it at once as a formula given in Ferriar’s valuable “Medical Histories.” It acts most powerfully by stool and urine (being composed of several of the most powerful of the diuretics, along with the elaterium); but I always found it to cause much and violent sickness.

R.—Extracti elaterii, gr. ij; spiritus ætheris nitrosi, ℥ij; tincturæ scillæ, oxymeliis colchici, āā ℥ss; syrupi rhamni, ℥i. M. Ft. Solutio. Capiat drachmam unam ex aquæ pauxillio, ter, quaterve in die.

The combination of a bitter purgative with a saline one composed of the vegetable alkali and a vegetable acid, is in my experience much more efficient than any single purgative, or than a bitter with a salt formed of a mineral acid. The old compound powder of jalap is a well-known instance of a mixture of this kind, and is still one of our best purgatives in all dropsies where this class of medicines may be suitable. Ferriar used, as did also Home, a combination of half an ounce of the bitartrate of potass with two grains of gamboge. The infusion of senna with bitartrate of potass is also an old-fashioned and valuable remedy; but the insolubility of the salt is an impediment to the efficiency of this formula. The senna infusion with tartrate of potass, or with the tartrate of potass and soda, is not liable to the same objection; and the advantage of the frequent use of this combination in cardiac disease having a tendency to dropsy, or in the dropsy itself attending that complaint, has been in my hands, and those of my brethren to whom I have recommended it, so unequivocal, that I can speak for it in the highest terms.

The preparations of mercury have proven, no doubt, very successful in the treatment of this form of dropsy, and consequently many practitioners give them a preference. Without wishing at all to detract from the merits of this most valuable agent, I must confess that, in chronic diseases of the heart, I have the same objection to it, and founded on the same grounds, as was that to the celebrated Dr. Fell, or, to use the more classic words of Martial—

* My learned friend, the translator of Hippocrates and Paulus Ægineta, writes, in a note, in his translation of the latter, “shaken in a garment;” but mine, I assert, is the more spirited version.

"Non amo te, Sabidi, nec possum dicere quare ;
Hoc tantum possum dicere, non amo te."

I do not like the mercury, and cannot speak from experience of its efficacy in cardiac dropsy.

There comes a time in the treatment of this complaint when not only diuretics in all forms, but even purgatives, cease to remove or even to keep in check the anasarca. And this brings me to speak of another mode of treatment, which often proves palliative for a time—viz., puncturing the lower extremities, and thereby draining off the fluid.

This is not a new mode of treating the disease, though it has at various times fallen into unmerited neglect, and perhaps at the present time more so than at any other. Freind, in his "*Historia Medicinæ*," refers to the passage in *Ætius* which treats of this method of curing dropsy. *Ætius* is quoting from *Asclepiades*, and says that "an incision is to be made in the internal part of the leg, about four fingers' breadth above the ankle, and that it is to be of the same depth as in venesection. A small quantity of blood flows first, and then there is a continuous discharge of water; and, without inflammation, the wound remains open until the whole dropsy has run off, no internal medicine being used." Freind continues, "*Ipsa operatio ab Hippocrate memoratur, et ab ejus temporibus usque ad hunc diem multo sæpe cum successu adhibita est. Aliam puncturæ, scilicet per acum, viam proponit Sylvius de la Boe, hanc a se primo excogitatam glorians; quanquam evidens sit ea omnia ex hac descriptione desumpta esse, atque totidem verbis ab Avicenna expressa.*" And then he adds, "*Verum haud sola hæc inventio recens dicitur, quam antiqui nobis medicinæ scriptores diserte tradiderint. Id autem omnibus in chirurgia vel minimum versatis constat, lanceolam longe præferendam esse cuivis acui, in aperiendis iis, quæ anasarcam comitantur tumoribus.*"—("*Historia Medicinæ*," p. 385: Lond., 1733.) Mead commences his notice of the treatment of dropsy ("*Monita*," p. 130: Lond., 1771) with an account of this operation. He directs an incision to be made two fingers' breadth above the ankle down to the cellular membrane, and no further; and he orders the leg to be fomented with a decoction of emollient herbs, to which some spirits of wine and camphor have been added. He tells us that he has often found this mode of treatment, not only in this disease (anasarca), but also in ascites, of great service, and sometimes curative, the water running out for many days to an extent to exceed all belief. He carefully cautions us to support the patient's strength under a serous discharge from this or any other wound. He then gives a case, apparently hopeless, of anasarca, combined with ascites, where, by a wound made in this manner in each leg, followed by a combination of bitters, squills, and such purgatives as elaterium, calomel and jalap, the patient recovered, and died five years afterwards of another disease.

This method of treatment is also brought under our notice by Heberden, in his "*Commentaries*," but not with so flattering hopes of advantage. He says, "When these and other diuretics have failed, as is often the case, some have attempted to draw off the water by incisions in the legs, and even by cantharides' blisters applied to them; and sometimes blisters take place spontaneously on the legs of dropsical persons. By these means," he continues, "I have seen not a small quantity of water drawn off, but never the disease cured (*'morbum autem nunquam sanatum'*); but they gave a brief respite, and eased the patient a little." He then notices the great objection to this mode of treatment—the difficulty of healing, and the danger of these wounds—"Odiosum est quod hæc vulnuscula interdum fiunt ulcera sanatu difficilia, vel periculosa, quanquam bis aut ter quotidie pannis laneis ex aqua calida expressis foveantur. Fomenta hæc utilia sunt ad aquam copiosius evocandam."—("*Commentarii*," p. 191: Londini, 1807.)

I have here quoted the opinions of these very practical men as a test, so far, of the value of the treatment by incisions and puncture. I have no hesitation in saying with both Mead and Heberden, that I have not only often seen it of great benefit to a patient labouring under anasarca, no matter what the pathological cause of that disease, but have also in some cases seen it prove a cure, or, at any rate, that, after recourse had to it, internal medicines, which previously

exerted no effect on the dropsical effusion, began to act, and the anasarca did not reappear.

I do not, however, recommend it until all internal remedies have failed. I never have recourse to it till it has become, to use Mead's expression, "*unica spes salutis*;" and I do not forget the qualification he makes, "*et ea dubia*." Still I am decidedly of opinion that, whether as a palliative or as a hope of cure, it deserves more notice than now-a-days it seems to me to get.

There are two modes, as stated above, in which the opening for draining off the fluid may be made—either a puncture with the lancet, or with a good stout sewing needle. From a single puncture by the latter, a quantity of water will sometimes run out so as to pass through the bed in a few hours, and require to be collected in vessels placed below it.

Heberden has evidently seen the danger attending this mode of treatment, though he does not say specifically in what it lies. He tells that the wounds are difficult to be healed, but that we need not fear. He also says they are "*periculosa*." Now, the danger consists in the inflammation of an erysipelatous character, that not unfrequently takes place, extending up the limb, sometimes bringing on *sphacelation*, and for the most part ending in the death of the patient. But if the medical attendant would be satisfied with one incision, and one, or at the most two, punctures, in the proper place, erysipelas is not so apt to occur. The state of the skin—its low vitality during the existence of the dropsy under it—is singularly favourable for this form of inflammation; but a small clean cut, or one or two punctures—and, if there be two, at a distance of not less than two inches from each other—is not so likely to be followed by this as when, in the anxiety to get the water all off speedily, several have been made. The writers whom I have quoted all recommend fomentations to be applied to the wound; but I have often found the evaporating lotion very successful in keeping down any disposition in the part to erysipelas. Frequent ablution, also, with tepid water, and the removal of any cloths that may be soaked with the serum that has run out, will serve to prevent, so far, any irritation from being set up in the skin.

When the operation, even with the needle, has to be often repeated, as is sometimes the case, for the ease of the patient, especially in cardiac dropsy, there is sometimes a degree of inflammatory action set up in the cellular tissue by which its interstices become obliterated, and the skin and it become quite closely adherent to the facia below. I remember this occurring in a gentleman, who had been kept alive for some months by punctures, and who was at last dropsical everywhere, except below the knees, where the adherent and thickened integuments would not distend—thus giving him, however, not a little pain. It has of late been recommended to have recourse to this treatment much earlier in the disease than was the custom with the old practitioners; and it has been said that the chances of success from it are much greater than when the patient's strength has been exhausted, and the vitality of the skin has been impaired by the long existence of a dropsical effusion. This reasoning is fair; but, whilst admitting it, one practical point may be mentioned, which is, that the fluid does not flow so freely from the incisions as when the areolar tissue has become more open and less resilient by the long existent pressure of the effused serum. And, little as the danger of erysipelatous attacks may be from puncture of the skin in the early stage of anasarca, still there are few that will subject the patient to this chance of danger until all the other more usual and often successful modes of treatment have been tried in vain.

As to another topical means of treatment in this disease—viz., the application of blisters to the anasarcaous legs, with the view of draining off the serum—I would have scarcely thought it necessary to speak, believing that almost none, now-a-days, would adopt this practice; but lately I met a very intelligent country practitioner, who told me that he occasionally had recourse to this application. Sydenham has condemned the practice, and branded it as a favourite application of empirics; and he states that "blisters entirely extinguish the natural heat, already almost overpowered by the water and deficiency of the animal spirits, and bring on a gangrene—too common in such cases." Sydenham's authority (and, by the way, he also condemns acupuncture) is great; but I have seen a

small vesicle, which had formed on one of the lower limbs, burst and drain off the whole serum from a person affected with extensive anasarca. The case alluded to is one of interest otherwise, though more properly suited to an article on renal dropsy. The patient, a lady, had the most albuminous urine I ever examined. Every remedy for dropsy had been tried by her medical attendant but mercury, and it was only left to me to suggest that, before the patient died, this medicine, which I had never seen more dangerous in this form of dropsy, as has been asserted by writers, than in any other, should be cautiously tried. This was done. Two days afterwards the vesicle above alluded to showed itself and burst, and our patient, much to our surprise, recovered, and is still in good health—seven years after the above attack. What nature does may not always be successful in the hands of art; and the exciting of a vesication by means of a blister is much more likely to be followed by dangerous than by curative effects in all anasarcaous limbs, from whatever cause the dropsical effusion may have arisen.

19. *Valvular Diseases of the Heart.*—Of all the organic diseases of the heart, the morbid conditions of the valves have been regarded as the most formidable. ROBERT HUNTER SEMPLE, M D., in an interesting paper in the *London Journal of Medicine*, thinks that he can prove that *valvular disease of a most formidable and extensive nature may exist for several years without compromising health to a serious extent, and without abridging the usual term of human existence.* He relates three cases, which he considers conclusive on this point, two of which we shall quote.

CASE II. *Disease of the Mitral and Aortic Valves, apparently of long standing. Sudden death without any previous illness at sixty-nine years of age.* Mrs. K., æt. 69, was a lady of very active habits, of mild and benevolent disposition, temperate and abstemious, of rather tall stature and spare figure; she had always enjoyed good health, with the exception of an inflammatory attack about twelve years before the date of the present history, but the exact nature of the disease I had no means of ascertaining. Although intimately acquainted with her and her family for ten years previous to her death, and although I was the medical attendant of the family, I had never known her to complain of any illness. Since her death, however, I was informed that she suffered occasionally from slight attacks of dyspepsia, and also from difficulty of breathing and faintness, but the symptoms were very transient, and never required medical assistance. From personal knowledge, I can state that she was by no means a person of sedentary habits, as she was continually attending to the duties of a large house, and I met her walking in the street almost every day. On Monday, June 27, 1843, about four in the afternoon, I was requested to see her immediately, as she had fallen down in a fit, although she had been previously in perfect health. At the time of the attack she was standing in the kitchen, superintending the affairs of the family, when she suddenly fell down. As I lived at that time next door to her, I arrived immediately upon being summoned, and found her lying on the floor with a pale countenance and very feeble pulse, and quite insensible. I was wholly at a loss how to account for her condition, as I had never known her to be ill during my whole acquaintance with her. I succeeded, with assistance, in placing her upon a sofa. Mustard poultices were immediately applied to the feet, and spirits of hartshorn held to the nose, but we had scarcely laid her down, when she expired.

Post-mortem Examination forty hours after death.—There was lividity on many parts of the body, apparently from gravitation, the lividity being chiefly observable on the under surface. Very little fat beneath the skin. *Head.* The vessels of the scalp were somewhat congested. The skull presented no remarkable appearance. The dura mater was slightly adherent to the inner table of the skull on the left side. Some fluid blood was found lying between the skull and the dura mater. The arachnoid membrane was somewhat opaque, and there was a considerable quantity of thin serous fluid effused beneath it; the veins of the pia mater were congested, especially in the posterior part of the brain. The brain itself, with the exception of being a little softer than is usual in persons of the age of the deceased, was quite healthy; and the only appearances

worthy of notice were the effusion of some fluid and the congested state of the meningeal vessels above described. *Chest.* The lungs were quite healthy, with the exception of slight congestion. The heart appeared externally to be larger than usual, but not remarkably so. There was very little fluid in the pericardium. The right auricle and ventricle, with their valves, were perfectly healthy. The left auricle was also healthy. The mitral valves were thickened by a deposition of semi-cartilaginous substance. The parietes of the left ventricle were very much thickened, but the cavity was of the usual size. The aortic valves were found very much diseased, and on looking at them from above downwards from the aorta, they appeared completely to close the passage. They were found to be converted into masses of bone, which nearly filled up the valvular orifice, leaving only a small chink for the passage of the blood. These bony masses were rough and nodulated, and were deposited apparently within the sinuses of the valves, and one portion of great size extended from one of the valves down into the cavity of the ventricle. The lining membrane of the aorta also presented a great number of bony plates. *Abdomen.* The liver presented no remarkable appearance. The stomach was full, the deceased having eaten her dinner a short time before the fatal occurrence. The kidneys were congested, and their cortical substance presented a somewhat granular appearance.

In this case of remarkable disease of the valves, the patient had enjoyed almost uninterrupted good health, and was in much better health, indeed, than most persons at her age. Nor can it be said that her immunity from unpleasant symptoms, and the delay of the fatal termination, was owing to care on the part of her friends, or to the indulgence of rest; for she was a person of great activity, both of mind and body.

CASE III. *Extensive disease of the aortic and mitral valves. Death at the age of eighty-three.* Grace Darton died on the 4th April, 1850, æt. 83. The history of the case was as follows: The patient was a thin, emaciated woman, of a pale complexion, and mild, submissive appearance, who had long been an inmate of the Islington Workhouse. I began to attend her in 1840, and had seen her from time to time since that period. She stated that she had had several attacks of rheumatism previously to my attending her, and that she had been bled three or four times for those attacks. She had not suffered from any of those symptoms which are usually considered among the prominent rational indications of heart-disease; such as swelled legs, palpitation, shortness of breath, etc.; and although she came into the infirmary at various times, for several ailments, it was never on account of any cardiac symptoms: and it was only by auscultation that I became aware that she had any affection of the heart. In fact, I was disbelieved as to the existence of any serious disease in her heart; and although I frequently recommended that she should be kept in the infirmary, and be constantly under medical superintendence, my recommendations were disregarded.

In the year 1840 (æt. 73), she had an attack of diarrhoea in March, which readily yielded to medicines. In August, she had an attack of chronic rheumatism, for which she was ordered a dose of calomel and jalap, and a purgative mixture: under this treatment she recovered, and was reported cured on the 11th of September.

Feb. 8, 1841. She had an attack of influenza; for which she was ordered a mixture, consisting of tinct. hyoscyami ʒij; sulph. magn. ʒss; inf. sennæ, aq. menth. aa. ʒij. During this attack she had some dyspeptic symptoms, for which she took carb. of magnesia, with sulph. of magnesia, and aqua menthæ. She was reported cured on Feb. 20.

January, 1842. She was seized with an attack of catarrh, for which she was treated with mild purgatives; but an attack of chronic bronchitis supervened, for which a blister was applied to the chest, and she was ordered to take gr. xij of ipecacuan. immediately, and afterwards to take the following: R. Vin. ipecac. ʒij; sulph. mag. ʒij; inf. sennæ ʒvj. Sumat coch. ij magna 4tis horis. During this attack, the state of the heart and lungs was particularly examined, when it was found that, besides mucous, sibilant, and sonorous rattles over the lungs, there was a loud rasp sound over the region of the heart. This sound

was very loud, and much prolonged, taking the place of the first natural sound, and almost obscuring the second. This sound was heard most loudly over the base of the heart, and extended over the region of the arch of the aorta, and the right side of the neck. The impulse of the heart was not stronger than natural; pulse 80, regular. I should here notice that the pulse was always regular, and feeble, whenever I examined it. The treatment was directed, in the first place, to the relief of the bronchitic symptoms, which were removed by the measures indicated above, and by others of the same nature; and on the 4th of Feb. 1842, the expectoration had diminished, and the râles had disappeared. The rasp sound, however, still remained as loud as ever, and I was convinced that the woman had confirmed and serious disease of the aortic valves. I thenceforward, therefore, always adopted a somewhat tonic method of treatment; recommending vegetable tonics, with light nutritious diet, and avoidance of exertion.

May 30, 1842. She had an attack of lumbago. A mixture was thus prescribed:—*R. Vin. colch. ʒij; inf. gent. co. ʒvj. Sum. coch. ij magnæ 4tis horis.* Under this treatment she was again reported cured. On the 19th of October, 1842, she had an attack of English cholera, which was successfully treated by carbonate of magnesia, and sulphate of magnesia in peppermint-water. On the 2d of July, 1843, she had an attack of common fever, from which she suffered for a week, but eventually recovered, by the use of febrifuge medicines and diluent drinks.

Sept. 8, 1845. She had a cutaneous eruption, attended with great itching, which I determined to be *prurigo senilis*. This was treated by mild aperients.

June 12, 1846. She had another cutaneous affection, attended with itching, which I regarded as lichen, and for which I ordered her twenty minims of liq. potassæ, in one ounce of compound infusion of gentian, three times a-day. This treatment was continued till the 17th of June, and the eruption disappeared.

Oct. 5, 1846. She now complained of faintness, nausea, want of appetite, and a disagreeable taste in her mouth. She said that she had lately suffered from palpitation of the heart and difficulty of breathing, when she exerted herself. She passed her water freely; never spat any blood; and had no swelling of the legs; bowels open, tongue clean, no thirst, pulse 58, quite regular, and weak. *Physical Signs.* The impulse of the heart was not increased, but the loud, sawing murmur was heard over the base, completely superseding the first sound, and was much prolonged; but a second, though much shorter murmur, was heard after it. Towards the apex of the heart, this murmur was also heard, but not so distinctly; it was distinctly heard over the region of the arch of the aorta, and over the right carotid artery. The diagnosis was still, of course, that the chief disease lay in the aortic valves. She was directed to take a moderate diet, consisting of mutton-broth, bread, milk, and tea; and to take the following medicine: *R. Acidi sulphurici diluti, ℥v; inf. gent. co. ʒj. Quartis horis sumend.*

Oct. 7. Much the same; dyspeptic symptoms remain; she complains of great faintness. She was ordered, in addition to the above treatment, to half-a-pint of porter daily, and to remain in the infirmary.

From that time, until very lately, I had not many opportunities of seeing this woman; and I heard that she died (without manifesting any particular symptoms beyond those resulting from her great age) on the 4th of April, 1850, aged eighty-three.

Post-Mortem Examination thirty-six hours after death. The body was emaciated; the legs were slightly cedematous; right side dull on percussion. *Head.* Scalp natural; cranium very thick, especially at its posterior part; sutures all obliterated; dura mater healthy, very firm, and dense: arachnoid membrane of a pearly, opalescent appearance, due to the presence of serum below its surface, which escaped on making an incision. The brain itself was moderately healthy; no softening, nor extravasation, in any part; arteries of the brain rigid and patent, owing to osseous and cartilaginous deposition—this was especially the case in the ophthalmic, vertebral, and internal carotid arteries; very little fluid in the ventricles. *Chest.* Left lung appeared of its natural colour and consistence; right pleural cavity contained a large quantity of fluid. About ʒxx of serous fluid were removed from this part; and in the

fluid there was a large mass of coagulable lymph, very soft, and of the consistence of thin jelly. Right lung healthy, and crepitant at the apex; but below, the texture was of a very dark colour, friable, and heavy, so that it sank in water. On cutting into this portion of the lung, it was found very much congested, did not crepitate, and, on squeezing it, a bloody serosity flowed out. On this side, therefore, there was acute pleuro-pneumonia, which was probably the immediate cause of the woman's death. The heart, seen *in situ*, occupied its natural position, and the apex was placed between the fifth and sixth rib. After removing the lung on each side, the heart, with the arch of the aorta, the innominate, the left subclavian and carotid, and the whole of the thoracic aorta, were all carefully dissected out, and removed together. The right auricle was natural; the tricuspid valves were patent, and admitted three fingers; but the attached margins were rather hard, and thickened. The semilunar pulmonary valves were natural; but the orifice was somewhat contracted. The left auricle was natural; the mitral valves admitted two fingers, but they were thickened and hardened, and contained a considerable quantity of osseous matter; the walls of the left ventricle were rather thickened, but not very considerably. The aortic valves were completely rigid, and converted into bone; and they met in the centre, leaving only a small chink at their juncture in the middle line. Looked at from above, the valves were seen stretched across the aorta, and each of the valves contained, in its sinus, a large mass of bony deposit. The ascending and transverse aorta were very much dilated, being, at least, twice their natural diameter; the innominate was also very much dilated. The lining membrane of all these parts was most extensively diseased, part being converted into atheromatous matter, part exhibiting numerous plates of bone, and part being ulcerated. These appearances were found in many other arteries—not only in the cerebral arteries already described, but also in the subclavians and carotids.

Abdomen. Liver congested, of very dark colour, and friable; spleen very small, congested; kidneys small, but not apparently diseased.

This, then, was a case of extensive valvular disease of the heart, in a patient who suffered hardly any of the rational cardiac symptoms, but who was attended, at different periods, for various ailments, as diarrhoea, chronic rheumatism, catarrh, chronic bronchitis, lumbago, prurigo senilis, dyspepsia, and, finally, died at the advanced age of eighty-three, of an acute attack of pleuro-pneumonia.

These cases Dr. Semple regards as of great value. "In the first place," he says, "if it can be proved that actual organic disease of the valves of the heart may exist for a considerable period, and without shortening the average duration of life, such a conclusion may tend to divest this class of maladies of some part of the terror which their existence now so commonly inspires; and a patient, who is unfortunately labouring under a disease of this description, may nevertheless be encouraged by the reflection that a disease of the heart, although of a decidedly serious character, may not prematurely put a stop to his career. And if such be the consolation which may, I think, fairly be afforded to those suffering under confirmed and extensive disease, how much more applicable is it to those who are affected only by some of those minor affections of the heart and its valves, which occur so frequently among the sequelæ of rheumatism?"

"In the second place, the subject is one of great importance in its relation to the average duration of human life, and the practice of life insurance. The existence of any disease of the heart is, I believe, an insurmountable barrier to effecting a policy of insurance; but I think it probable that in proportion to the accumulation of facts bearing upon the subject, the deductions drawn only from the physical exploration of the heart will not be so exclusively regarded as they have been of late years. But upon this point I wish to be understood as offering a very guarded opinion; for I have no wish whatever to undervalue the importance of the information derived from auscultation; nor do I pretend to assert that the existence of cardiac disease is a matter of slight moment. All I presume to argue is, that cardiac disease, even of a very decided and extensive character, may be compatible with long life and with moderate health."

Notwithstanding these opinions, Dr. Semple regards the *treatment* of valvular disease of the heart to deserve the closest attention, and the most zealous ap-

plication of the resources of our art. It is essential that the disease should be checked if possible at its *commencement*. "In the early stage," he says, "of valvular disease, the stethoscope is invaluable; it gives us the earliest intimation of its existence, and we are supplied with means for its repression. The patient suffering under the agonies of articular rheumatism is often unconscious of the mischief going on at the fountain-head of life; the stethoscope reveals the latent evil—vegetations of albumino-fibrine are encrusting the surface of the valves—but the judicious administration of mercury causes the absorption of the peccant lymph, and the channel of the blood is restored. And even when the disease of the valves is unfortunately confirmed, medical appliances may do essential service in alleviating the sufferings which often ensue, and in delaying or averting the fatal catastrophe. The palliative measures which ought then to be adopted, it is almost unnecessary to insist upon. The injunction of the necessity of rest, both mind and body, will be frequently repeated; and the state of the digestive system will, of course, form a prominent subject of inquiry and of treatment. The use of digitalis, which I believe to be of the utmost value in some of the organic diseases of the heart, is, I think, contraindicated in most cases of valvular disease, in which the current of the blood is diminished, and the vital energies consequently impaired; in such instances, digitalis must undoubtedly do more harm than good, by lowering the force of the heart, and still further enfeebling the circulation. In such cases, it is better to rely upon those measures which are calculated to strengthen the system, and to stimulate the heart to propel the blood through its diminished channel; and I adopt a somewhat tonic system of treatment under such circumstances, as the best calculated to counteract the effects of the valvular obstruction."

20. *Epidemic Cholera*.—Dr. P. H. WILLIAMS, in a report on cholera made to the Provincial Medical and Surgical Association, gives a very candid statement of the results of his investigations relative to this remarkable disease.

"It might fairly be expected," he remarks, "that a considerable amount of practical instructions would be supplied by a pathological report founded on the combined experience of the members of the Provincial Medical and Surgical Association, and yet it is a painful duty to record the fact that, with regard to the nature, history, treatment, and prevention of the disease which has formed the subject of this inquiry, very little new information has been gleaned."

As regards the results of post-mortem examinations, he states that "the only important information derived from them, in addition to what was previously well known, is the fact that the state of the intestines was such as must have rendered *any* mode of *treatment* inefficient. They are described as being 'either filled with a gruelly fluid, or else coated with a tenacious pasty layer of mucus.' Under such circumstances, it would be scarcely possible for any medicines to come in contact with the mucous membrane, so as to operate locally, or by absorption. They would probably glide rapidly through the alimentary canal, without producing the least effect."

In respect to treatment, he says, "It is almost needless to assert, for every one is already acquainted with the truth, that nearly everything both in and out of the Pharmacopœia was tried, and in some cases nearly all the preparations that could be shaken in a bottle or beaten in a mortar were *combined* for the purpose of counter-poisoning, if possible, the unhappy victims. The peculiar condition of the intestinal membrane, already adverted to, must certainly have been the cause of immunity from the effect of poisonous doses when administered, as it was also the cause of no benefit arising from the introduction of sanitary medicines.

"According to the evidence submitted for consideration *every* method was successful, and *every* method failed. Venesection and brandy; croton oil and gallic acid; opium and ammonia; sulphate of magnesia and acetate of lead; capsicum and ice; calomel and strychnia; scammony and starch; antimony and quinine; blisters and cider; nitrate of silver and gruel; venous transfusion and cupping; gallons of salines, and total abstinence from fluids; carbon and

oxygen; hot fomentations and cold sheets; in short, *every* thing and nothing has been *invaluable*.

"What deduction must be drawn from such a chaos, when the average mortality under every system was nearly similar! What is to be stated as established, when we find a most intelligent practitioner losing fourteen out of sixteen cases, in spite of every exertion that science and industry could make, and another gentleman assuring us that out of *two hundred* cases of *premonitory* diarrhœa he only lost a single patient? The only conclusion that can be justified by reason, must be this—That there are *many* cases, especially at the commencement of choleric visitations, in which the poison is so virulent that *nothing* can resist its withering influence, and the prostration so complete that *nothing* can restore the stricken energies. That there are other cases in which the poison, being of a less malignant character, and it may be the constitution of the patients less yielding, the disease, if treated at the first onset by *any judicious* method, may be effectually checked. And that there is a third class of cases in which early treatment does not prevent the progress of the malady; it may be said to run its course even to the access of apparent death, and yet from that stage the patient *may* gradually recover, and return as it were from the very threshold of the grave.

"We have thus *three* distinct divisions before us, in one or other of which the majority of cases may be arranged. It is clear that the fatal cases must belong either to the first or third division—*i. e.*, death must occur at an early period before medicines have had time to combat with the enemy, or at a later period when the disease has steadily progressed in defiance of persevering treatment. It should be remembered that in about *half* the cases in 1849 death *did* occur notwithstanding all our efforts; and it will probably be admitted, with regard to the *first* class of cases, that no means with which we are acquainted *could* have saved the victims from destruction. In the third class some patients are to be found who did recover from a state of extreme collapse—patients in whom *every* symptom of cholera was manifested, and who only just escaped in time to live.

"It is with reference to these persons that the greatest difficulty arises; for if no treatment could produce the least impression on the disease till the whole train of consequences, with the exception of actual death, had been fully developed, and then, at the precise moment when the last breath had apparently been drawn, a favourable change began under the most opposite systems of medication, how can it be fairly concluded that the change was owing to any circumstances, except the single fact that the virus was *exhausted*, and the patient had strength to *struggle* back to life? There is no satisfactory evidence that in the worst description of cases one method of treatment was decidedly better than another; nor is there satisfactory evidence that the recoveries which were witnessed under *those* circumstances were attributable to *any* treatment whatever.

"We now come to the *second* or medium class of cases mentioned, *viz.*, those which were amenable to remedies at a comparatively early stage of the disease—those cases in which actual collapse did not supervene. *Why* did it not supervene? If a physician were called upon to attend a hundred patients who had swallowed the same specific poison, and he applied, experimentally, a different medicine to each, and fifty sank into collapse, and the other fifty did *not* do so, what would be his inference? Surely that they who *did not* had either taken a *smaller* dose, or a *weaker* preparation, or had *stronger* constitutions. Our inference with regard to cholera must be analogous.

"We conclude that in the restorations from collapse *no* medicine was efficacious, and we must now conclude that in cases which were free from collapse, *all* medicines were efficacious. And why? Because the dose of poison was smaller, the preparation weaker, or the constitution stronger. Upon this supposition, and upon this alone, the conflicting testimony as to successful treatment can be explained. Calomel, in small doses, might restore the arrested secretions. Purgatives might carry off deleterious elements. Opium and astringents might prevent a further exudation. Antimony might relieve the mucous surfaces by acting on the cutaneous capillaries. Blisters, cataplasms, and fomentations,

might produce a similar effect. The abstraction of blood might relieve the inflammatory tendency which was in many cases noticed. And, in others, stimulants might help the system to maintain its energy until the primary mischief was removed. So that, whatever plan be pursued in a *certain class* of cases, intelligible relief may be obtained, because *each* plan is capable of producing some effect; and it appears to be of little consequence in which way the benefit is conferred.

"It should be stated that the administration of calomel and opium, in small doses and at short intervals, appears to have been the *favourite* practice; but there is abundant evidence to prove its failure, and also to prove that in cases as malignant as any which ended favourably under that plan, recovery also ensued without a grain of either being used during any stage of the disease. Two authentic cases are reported in which the only treatment was *cider, ad libitum*. One of these patients was quite pulseless when the cider was prescribed—*both recovered!* The saline treatment does not seem to have been generally tried, although it was found to be successful in the hands of several careful observers."—*Provincial Med. and Surg. Journ.* Sept. 18th, 1850.

21. *Epidemic Mumps at Geneva and Montpellier.* By MM. RILLIET and RES-SIGUIER.—M. Rilliet, one of the authors of the well-known classical work upon the "Diseases of Children," now settled at *Geneva*, has published a very interesting account of an epidemic visitation of mumps, which prevailed there from March 1848 to May 1849, Dr. Lombard having assisted him in the acquisition of many of the facts. Still the exact number of cases could not be ascertained.

In the great majority of cases there were no premonitory symptoms, those of a local character being the first intimation of illness the patient received. We need not detail these. The tumefaction of the parotidean and mastoidean regions continued increasing from four to six days, and, after remaining stationary, then rapidly diminished, so as to have disappeared by from the seventh to the tenth day—the submaxillary gland continuing hard and swollen, in several cases, long after the resolution of the parotidean tumour. The most frequent cases were those in which the tumefaction was of medium size only; but in some it was enormous, extending almost to the external extremity of the clavicle. In such, and in subjects predisposed to neuralgia, the pain was severe and even violent, but in the other cases moderate—it being usually spontaneous, but also augmented by pressure and every movement of the jaw, which, indeed, was sometimes almost as immovable as in tetanus. In some cases, when the mouth could be sufficiently opened to allow the tongue to pass, the patients were unable to protrude it. In no case did Dr. Rilliet or any of his colleagues witness salivation, nor, when examination of the mouth and fauces was practicable, could any exanthema be observed. The swelling was usually double, but rarely so at first, commencing usually on the left side, and then proceeding, in a period varying from twelve hours to three or four days, to the opposite side, one gland being almost always more swollen than the other.

The accompanying constitutional irritation was not prolonged beyond forty-eight hours, save in very bad cases. A feeling of great lassitude and debility, accompanied or followed the appearance of the swelling, several patients not recovering their ordinary strength for two or three weeks. The cure was always more prompt and complete in children. The duration of the disease, in slight cases, and in children, was but four or five days; but, in other cases, usually eight or ten; then six or seven, and, lastly, seven to eight days. In some it continued even to the fifteenth day. Authors speak of this disease terminating by *suppuration*; but no example of this occurred. It is very rare for the disease to attack children under two years of age, and no example occurred under one. So, too, after forty, cases were very rare. The maximum number occurred between five and fifteen. The two sexes were affected nearly alike.

M. Rilliet believes the disease to be analogous in its nature to *eruptive fevers, and to be contagious*. The period of incubation is as difficult of determination as in other fevers; but both the author and M. Lombard believe that it is most often found to be from twenty to twenty-two days, and then from four-

teen to eighteen days. Still, in one of the best-marked cases it did not exceed eight days. In families, the disease usually appeared successively, not simultaneously. The experience of the author and his colleagues is favourable to the non-recurrence of the disease, attacks at former periods of life exerting a marked preservative power. Like other febrile diseases, too, this has occurred as an epidemic—so considerable a one not having been observed at Geneva in the memory of man, the number affected being, as in measles, proportioned to the length of interval between the visitations. It prevailed equally in warm and cold weather, during its continuance. During its prevalence various other diseases were observed; but roseola was especially so during its height, not the simple summer roseola, but an eruption very analogous to rubeola.

The treatment of the disease was very simple, frictions with anodyne substances being especially resorted to when the pain was great. Blood-letting was never required, but stimulating pediluvia were employed as revulsives. In children, in whom the digestive organs were usually disordered, emetics were found useful, and almost always slight aperients were given during convalescence. In some cases, tonics were eventually required, as were anodynes when the pains were urgent.

The only complication which the author has had frequent opportunity of observing, has been *orchitis or engorgement of the testis*. He met with but one case of tumefaction of the labia. The orchitis did not usually commence with severe pains, and the patients have been surprised at discovering the amount of swelling. This usually reached its height in from four to six days, diminished on the sixth or seventh, and had disappeared in from eight to fifteen. At the commencement the scrotum was not oedematous, and the testis rather than the epididymis was attacked with the swelling, which never acquired the hardness of blenorraghic orchitis. In slight cases, the testis was half as large again as natural, but in severer cases its volume became doubled or even quadrupled. When the epididymis was affected, it was to a less extent than the testis, and was much indurated only in one case. The cord was almost always normal, but sometimes a little enlarged. Sometimes, on from the third to the twelfth day, the scrotum also became swollen, with or without redness, the swelling, sometimes considerable, being oedematous; and when the scrotum was implicated, both the swelling and pain were much greater than when the testis alone was affected. It was in these cases that general febrile symptoms were most marked. When the orchitis was cured, the testis in general returned to its normal condition; becoming, however, in some cases atrophied.

The orchitis usually appeared the sixth or eighth day, very rarely from the third to the fifth, and the parotid swelling had almost always much diminished; but no case of *metastasis*, properly so called, was observed, nor any example in which the orchitis suddenly disappeared, and the parotitis re-appeared. While the parotitis was oftener double, the orchitis was oftenest unilateral; and orchitis on the right side was observed in thirteen out of twenty-three cases, and in four it was double. In two cases there was orchitis without parotitis. The greatest number of persons attacked by orchitis were between twenty-three and thirty-eight years of age—the youngest being fourteen, the eldest forty-five. Most examples occurred in the lower class of patients, and the complication especially prevailed in January—twice as many cases then occurring as in all the other months together. The treatment of the orchitis was very simple, as by linseed poultices, fomentations, goulard water when the scrotum was oedematous, &c. Sometimes an emetic was given, and in three cases blood was abstracted.

M. Ressiguier supplies a much less exact account of the epidemic which prevailed at *Montpellier*. It was first observed in February, 1848, and by April its epidemic character had become evident. In this month, the metastatic symptoms were first observed. It became less frequent in June, and sporadic cases were alone observed in July. The swelling usually took on the characters of active oedema rather than inflammation, but in several cases it required leeching. When both sides were affected, they were almost always so successively, the left usually taking the precedence. The accompanying fever usually abated when the tumour was completely developed; but, in other cases, con-

tinued during the entire duration of the case, and was attended by exacerbations. In most cases the cedematous engorgement was dissipated in five or six days, but in others required double the time. It never terminated by supuration.

In some cases, as the parotid tumour diminished, orchitis showed itself, and between March and June none of the patients were secure from this. In the present epidemic, while the parotitis was as yet unaccompanied by orchitis, a young man became the subject of this without having had any parotid affection whatever; and Groffier, who has left an account of a prior epidemic in this town, in 1806, relates the case of a man in whom, after the disappearance of an orchitis, the parotitis became developed. A similar case also occurred on the person of a soldier during the present epidemic; and in other patients the two affections appeared simultaneously. In the majority of cases orchitis showed itself on the opposite side to the parotitis, and only in one case was it double, though this was of frequent occurrence in the parotitis. The present epidemic confirms the statement of Laghi, that the so-called metastasis is never seen before puberty, and very rarely in the aged.

The present epidemic, like former ones in 1757 and 1799, especially attacked the soldiers in garrison.—*Brit. and For. Med.-Chir. Rev.*, Oct. 1850, from *Gaz. Méd. de Paris*, 1850.

22. *The Bronchocele of New-born Infants*.—Dr. Betz, of Tübingen, has published an interesting essay upon this subject. He attributes the silence of authors respecting it rather to their having overlooked the affection than to its rarity. Such children are usually stout and full-blooded, and the enlarged thyroid may be mistaken for a mere fold of fatty integument. In some, the neck seems merely too broad, while in others it undergoes no change; these differences depending upon the part of the gland engaged.

Immediately or very soon after birth, a marked difficulty of respiration comes on, which may prove fatal in a few hours, or in two or three days only. The inspirations are deep, being accompanied by a peculiar croaking tone, that may be heard outside the door. The expiration is also very laboured, and sometimes accompanied by a cry. At times the breathing seems quite arrested, so that the child is in the most extreme danger from suffocation, until, with a cry, inspiration again occurs. The dyspnoea is sometimes irregularly paroxysmal. The *alæ nasi* are usually expanded, and the lips and hands of a blue colour. Sucking is impossible, and attempts produce the most extreme dyspnoea, which is also excited if the child be fed, the greatest difficulty prevailing in getting it to swallow the least quantity. The mouth is full of saliva and mucus, which collect in small bladders between the lips. According to the amount of disease the remissions are longer or shorter, and the child sometimes at last goes off quite unexpectedly.

The affection consists in a simple hypertrophy of the thyroid; no change in its normal structure, save perhaps some increase in its vascularity, being observable. The whole gland may be affected, giving a crescent shape, and where an isthmus connects the two lobes the neck assumes a great breadth. In other cases only one lobe or even only the apex of that may be affected, and the nature of the disease be undetected. The passage to the larynx and trachea is more or less impeded, while the posterior development of the tumour impedes swallowing, and endangers suffocation in the attempt. The accumulation of mucus is an additional cause of obstruction. It is not merely the size of the swelling of the lobes, but its position, that determines the amount of danger.

The affection would seem sometimes to be hereditary, or at all events it affects several members of the same family. Various friends of Dr. Betz have observed this bronchocele of infants, but he is not disposed to consider it as especially endemic at Tübingen. He thinks that the suffocative dyspnoea and death resulting from this disease may elucidate the nature of some of the cases of laryngeal asthma, spasm of the glottis, thymic asthma, or laryngismus, concerning which so much confusion and doubt at present prevail. An enlargement of the thymus may certainly co-exist with one of the thyroid, but this last

affords a much more rational explanation of the symptoms. Thymic enlargement may induce dyspnoea, but not the laryngeal disturbance. Atelectasis, too, the author believes, is often due to the impediment caused by this enlarged thyroid.

In a disease so rapid in its progress, little time remains for treatment; but where this is obtainable, leeches should be applied, and an emetic given. Where the hypertrophy is less considerable, and the disease more prolonged, the internal and external use of iodine would be deserving of a trial.—*Med. Times*, Sept. 7, from *Henle and Pfeufer's Zeitschrift*, ix.

23. *Nightmare caused by Excessive Elongation of the Uvula, and cured by Excision of the Part.* By M. WEST, of Belgium.—Bronckaert, a fusileer of the 7th infantry, who had been a soldier since January 1849, of feeble aspect, came to M. West, in the course of last March, to request twenty-four hours' exemption from duty, to enable him to recover from the fatigue and fright which he suffered during the night from the apparition of a monster, which threw itself suddenly upon him, so as nearly to smother him, and against which, he said, he had struggled for a long time before making his escape. This strange story led the author at once to suppose that the man had had nightmare. After quieting his mind upon the subject of the monster, which so much alarmed him, the doctor gave him twenty-four hours' exemption, at the same time telling him not to come back to him upon the subject of his dreams. He thought he would not see the man again, but next day Bronckaert came back to say that he had passed a night as horrible as the preceding one. M. West tried to explain to the man the absurdity of his terror; advised him to take a little food in the evening, to sleep on his right side, with the head and shoulders a little raised, thinking that these means would suffice to relieve him.

Bronckaert's torments, however, not having ceased, he came again to the doctor, after having followed his advice for three weeks, and told him that he now saw no hope for relief from these attacks, which had begun more than a year before his enlistment, and under which he expected soon to perish. Having remarked during the interview an obvious imperfection in the man's respiration, Dr. West looked into his mouth to examine the cause, and saw, to his astonishment, that the uvula was about two inches long and four lines broad, although the man had never referred any of his complaints to this quarter. Thinking that the long uvula was the cause of the suffocation and fright which the man suffered during his sleep, Dr. W. instantly cut off from the uvula an inch and three-quarters of its length. The portion excised, being of unusual length, was preserved in spirits, and, after the usual shrinking from the alcohol, still measures an inch and a half.

Dr. West saw the man next morning. He was in an ecstasy of joy. The monster had not re-appeared, and he had passed a good night. That the uvula getting into the glottis was the cause of the man's sufferings appeared both from the complete relief which he thus obtained and from his subsequently becoming strong and fat.—*Monthly Journ. Med.*, Sept. 1850, from *Archives Belges de Méd. Militaire*.

24. *Ozæna*.—M. MAX-SIMON, in relating a case of this disease, makes several interesting remarks. Sometimes, he observes, it arises from ulceration of the Schneiderian membrane; at others, a deformity of the organ, whether congenital or acquired, prevents the free discharge of the mucosities of the nose, while in some cases there are signs of simple chronic inflammation. Another class of cases, of which this is an example, arises from a morbid condition of the economy at large, inducing modification in the condition of the secretion: just as we meet with intolerable stinking secretion from the feet in persons perfectly clean; a peculiar odour from the axilla, occurring in others besides the red-haired, in whom it is normal; and an insupportable condition of the breath in certain menstruating women. In such cases as these, the most careful examination exhibits no marks of inflammation or ulceration. The ulceration, in fact, which is met with in syphilis or other diseases, is not the cause of this peculiar stench, which is different from the smell they produce. A delicate

young lady, æt. 14, had been under M. Simon's care for several years for well-marked ozæna. Repeated examinations exhibited nothing abnormal, the mucous membrane being pale and not thickened, and the mucus itself normal in appearance, though sometimes increased in quantity. All medical treatment, whether local or general, proved quite unavailing, so that at last all was abandoned, but extreme cleanliness, and attention to maintain the general health in as good a condition as possible. However, menstruation came on, under the influence of which her system became much stronger, and her health far better, and the fœtid odour diminished, to entirely disappear sixteen or eighteen months after the menses had become established. Another proof of the constitutional character of the disease in this case, and of the inutility of local measures, is found in the fact that a blister having been applied to the girl's arm, the serum furnished precisely the same smell. Her mother, too, suffered from the same infirmity, although by excessive cleanliness she kept it somewhat concealed. Her nose was a flat one, but that of her daughter was well formed.

These well-marked cases must not be confounded with a mere temporary unusual odour of the nasal mucus. In some persons, this is liable to become accumulated or suppressed for a longer or shorter time. In the case of a young man, in whom there is no congestion of the mucous membrane, thickened mucosities are blown out from time to time, having a distinct spermatic smell. A young girl, at times, exhales mucus having the characteristic smell of ozæna, and then, without the slightest care on her part, this disappears.

When the disease depends upon a mere perverted action of the mucous membrane, the nitrate of silver injections are very useful; but when it is a constitutional affection, all local applications are mere palliatives. The greatest cleanliness is essential, and scented waters should be frequently injected into the nose. Sauvages found advantage, in some cases, from the setting up a substitutive action by the use of snuff.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1850, from *Bulletin. de Thérap.*, vol. xxxix.

25. *On the Diagnosis of Tape-worm, from the character of the Nervous Symptoms induced by its presence.*—M. LEGENDRE, has published an interesting memoir, upon the nervous symptoms produced by tape-worm, in the *Archives Générales de Médecine* for June 1850. He places the facts of this department of diagnosis in a very clear point of view; and, on this account, we think it right to call the special attention of our readers to the following brief abstract of his paper. When anomalous nervous symptoms perplex the physician, it is always right to compare them with those which are known to be caused by tape-worm; and if any room for suspicion of its presence exist, it is always imperative to administer a vermifuge. We say *always*, because the experiment is at least harmless, as the perfect safety, as well as the general success of the koussou has now been fully established on unimpeachable authority. We would, in all cases, prefer this medicine, or the oil of the male fern, to the bark of the root of the pomegranate, which is considered by M. Legendre to be the best. The latter is likewise, undoubtedly, a most valuable drug for dislodging the tænia; but it is not quite equal to the koussou, or the male fern.* The following is the substance of M. Legendre's paper.

Thirty-three fully reported cases are carefully analyzed.†

Disorders of the cerebro-spinal nervous system occurred most frequently; viz., in twenty of the thirty-three cases. They were in twelve cases, of a convulsive character, occurring several times, or oftener (being eight times epileptiform, and four times hysterical). In eight of the cases the convulsive movements were partial, being confined to the face, or to a single limb. In fourteen of the thirty-three cases, the convulsions were succeeded by vertigo and cephalalgia.

* London Journal of Medicine, vol. for 1850, p. 896.

† The following are stated to be the sources whence the cases have been derived. *Archives Gén. de Méd.*, 1840. *Gazette Méd.*, 1839, p. 601; 1840, p. 633; 1843, p. 38. Louis, Observations recueillies à l'hôpital de la Charité sur la Tænia. *Archives Gén. de Méd.* Mérat du Tænia et de sa cure radicale par l'écorce de racine de grenadier, obs. 14, 15, 17, 18, 19, 22, 24, 25, 26, 27, 82, 108, 119, 120, 121, 142, 154, 155, 157."

Swooning, complete or incomplete, was noted in about a fifth of the cases; viz., seven times.

Disturbed vision was noted in six of the thirty-three cases. This consisted in double vision or in the presence of flocculi, of *muscæ volitantes*, and of luminous flashes. One patient is mentioned as having had periodical blindness.

Buzzing in the ears is only mentioned as having occurred in three of the cases.

A pricking or gnawing sensation at the epigastrium existed in fourteen of the thirty-three patients. The symptoms now enumerated rarely existed singly in one patient, and two or three of them were generally present in the same individual.

Whenever one or more of the above symptoms are observed, and no other explanation can be given, an investigation should be made to determine whether they may not depend upon tape-worm. If the physician discover that the patient have a gnawing at the stomach, capricious, or insatiable appetite, abdominal pain, a feeling of general prostration, or itching at the entrance of the nostrils or anus, there can be little doubt of the presence of the parasite. M. Legendre believes that the best time for giving vermifuge is when the symptoms are most urgent, or when some parts have been spontaneously voided. He says that Wawruch, of Vienna, in an analysis of two hundred and six cases, attributes such occurrences to lunar influence; asserting that they occur most frequently at the full moon, or during its decline, and that it is, likewise, at these times that the patient suffers from an exacerbation of the symptoms. It was not till M. Legendre had finished his researches that he became acquainted with the analysis of M. Wawruch's paper, published several years ago, and which, from its value, we subjoin.—*London Journ. Med.*, Nov. 1850.

26. *Wawruch on the Causes and Symptoms of Tape-Worm.*—The following is an extract from an abstract, contained in the *Gazette Médicale* for 2d October 1841, of a paper published by PROFESSOR WAWRUCH in the *Medicinische Jahrbücher der Oesterreichischen Staaten*.

During the period of twenty years, Dr. Wawruch treated 206 persons affected with *tænia*; 71 men, and 135 women. The oldest person was aged fifty-four; the youngest, three and a half years. Twenty-two were under fifteen years of age; and among these were six girls who had not menstruated. Most of the patients were from fifteen to forty years old. The patients belonged to the middle and lower classes; they nearly all inhabited the district lying along the Danube, or lived in low and damp dwellings. They followed very different occupations, and their mode of life was various. It is remarkable that the same conditions which give rise to scurvy in Vienna also produce tape-worm. The articles of food which seemed chiefly to engender tape-worm were bad bread, meals of milk, butter, cheese, potatoes, pork and mutton, and bad water. The diseases which preceded the formation of *tænia* were gastric and cutaneous affections, but especially gastric and intermittent fevers. There were observed forty-three cases of intermittent fever, twenty of gastric fever, sixteen of typhoid fever, ten of ringworm and herpes, forty-two of itch, eight of scarlatina, thirteen of measles, and two of chronic urticaria. Scurvy, syphilis, chlorosis, and other diseases which affect digestion, were also observed to precede *tænia*; but, in general, few of the individuals affected with tape-worm had not had lumbrici when young. The influence of hereditary predisposition is very doubtful. Dr. Wawruch only saw two instances; in one, a mother and daughter, in another, a father and son, had *tænia*. Irregularity of the menstrual function seemed common; thus, thirteen females had only menstruated at the age of 16 years, twelve at 17, nine at 18, seven at 19, and one at 20. The duration of the disease was from a few months to ten, twelve, fifteen, twenty, twenty-five, and, in one case, even to thirty-five years. Of the 206 patients, three only, who were foreigners, had *bothriocephalus*; the others had *tænia solium*.

Symptoms. The symptoms of *tænia* are very various; the following are stated by Dr. Wawruch to be the most constant.

1. Dull pain in the frontal region, vertigo, noises in the ears; and, in some

a kind of idiosyncrasy for music. 2. Eyes dull, surrounded by a blue ring; œdema of the upper eyelid; pupils dilated; frequent involuntary action of the muscles of the eye; various aberrations of sight, as amblyopia, diplopia, or muscæ volitantes. One patient complained of a periodical blindness during the day. 3. Frequent change in the colour of the face; lips lead-coloured; a peculiar look about the mouth and nose; the appearance of general cachexia is not constant, for the patients often preserve a flourishing aspect for some time: many of them say they have become thinner. 4. Anorexia, alternating with such a voracious appetite that the patients faint if they are not supplied quickly enough with food; desire for certain articles, as carrots, milk, wine, bread, etc. 5. Fetid breath, clayey taste, loaded tongue, salivation, nausea, and even vomiting of liquid, as clear as water, in the morning. 6. Itching of the nose and anus, and of the vagina in females; grinding of the teeth, especially during sleep; accumulation of a clear fluid in the mouth; transient heat, languor, palpitation. The sensation of a cold hand pressing on the heart (considered as a pathognomic symptom by Reinlein) has never been observed. 7. Abdomen tumefied; borborygmi; a sensation of suction, constriction, and pricking, around the umbilicus, and undulatory movements, as of a foreign body in the intestines—especially in the morning; cessation of these symptoms after taking farinaceous food, hot bread, or *café au lait*; frequently diarrhœa, alternating with constipation. 8. When the disease has continued for some time, and the patients are of an irritable temperament, there often arise a train of nervous symptoms, as melancholia, syncope, aberrations of the senses, disturbed sleep, frightful dreams, partial and general convulsions, chorea, epilepsy, aphonia, and loss of speech. 9. The most certain pathognomic symptom is the evacuation of one or more portions of tape-worm, either spontaneously, or after certain severe illnesses—as scarlatina, typhoid fever, pneumonia, etc.; or after the use of certain articles of food, as garlic, horseradish, cucumber, etc.; or after the administration of anthelmintic medicines. The portions are sometimes evacuated at indeterminate periods, but generally at new moon, or at the decrease of the moon; and, at these times, also, the other symptoms are increased in severity.—*London Journ. Med.*, Nov. 1850.

27. *Cod-liver Oil in Phthisis*.—M. DUCLOS thus sums up the results of his experience with this substance; 1. The presence of fever is what we must chiefly attend to, relying more on this remedy when it is absent, and less when it is present. 2. The remedy frequently arrests the progress of the disease when only in the first stage. 3. It rarely arrests it when in the second stage, although it may retard it. 4. The third stage is not favourably influenced by the oil. 5. The oil should be administered for a considerable time; and, if a good effect results, it should be suspended awhile, to be again resumed. Thus, it may be given for two months, and then suspended for a fortnight, resumed for a month, and re-suspended for a fortnight again, so as gradually to reduce the length of the intervals during which it is given. 6. The clear, slightly smelling, nearly tasteless oil, is less efficacious than the brown, thick, strong oil.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1850, from *Bulletin de Thérapeutique*, xxxviii.

28. *Inunction in Scarlatina*.—During an epidemic scarlatina in Berlin, Dr. EBERT tested the value of the treatment introduced by Dr. Shneeman, of which we gave an account in our last, No. (p. 503, *et. seq.*). The result has been tolerably encouraging. Of twenty-eight cases of severe scarlatina, six died and eleven recovered. Of the six deaths five had not been submitted to inunction; the remaining one was an infant, who died suddenly after one rubbing. This fatty inunction appeared to hasten rather than to prevent the exanthem. In those cases which were assiduously anointed, no desquamation occurred, neither were any of the sequelæ, as anasarca, abscesses, &c., observed. The anointing was also thought to prevent infection.—*Schmidt's Jahrbucher*, June, 1850.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

29. *History of a successful case of Ovariectomy.* By W. E. DUFFIN, Surgeon; with a description of the Morbid Anatomy of the sac, and an analysis of one hundred and eight cases of ovariectomy which have occurred in Great Britain. By ROBERT LEE, M. D. [The following account of a case of ovariectomy, read before the Royal Medical and Chirurgical Society, with the report of the discussion to which it gave rise, is so interesting and important as showing the opinions of some of the most eminent surgeons of Great Britain relative to that operation, that we are not deterred by its length from laying it in full before our readers. We would especially invite attention to the remarks of Mr. Lawrence, one of the most experienced, learned, and judicious surgeons of the present day.]

A woman, thirty-eight years of age, having her abdomen enlarged to the size of the eighth month of pregnancy, this size having been attained in seven or eight months, her general health appearing to be good, applied to the author for relief by operation. The rapid growth of the tumour, which appeared to be connected with the left ovary, had been accompanied by neuralgic pains in the right thigh, in consequence of pressure on the sciatic nerve of that side. The tumour was very movable, indicating the absence of adhesions. The patient was very urgent in her desire for the operation, and very confident that it would be successful; it was accordingly performed on the 27th of August last, by the author, assisted by Messrs. Ferguson, Ure, and Henry Smith; chloroform having been previously administered by Dr. Snow. The incision, at first of only sufficient size to admit the fore-finger for exploration, afterwards enlarged to three inches, was made in the linea alba, midway between the umbilicus and the pubes. The absence of adhesions having been ascertained, the sac was punctured by a trocar, and one hundred and thirty ounces of a viscid, ropy fluid of a light brown colour were let out. The collapsed cyst, containing a smaller cyst the size of an orange, was drawn through the incision, and its pedicle secured by ligatures. The tumour was then separated, and the pedicle and ligatures were prevented from receding into the cavity of the abdomen by other ligatures attaching them to the wound. The ligatures came away on the fifteenth day, and the wound was healed on the twenty-second day, the abdomen resuming its natural shape and size. The patient was kept on a light diet, she took opium in sufficient doses for six successive nights, and the bowels were opened by enemata. On the eighteenth day, she was able to get about a little. Her recovery has been complete, and she has been able to resume the occupation of a dressmaker.

Dissection of the Cyst. By ROBERT LEE, M. D., F. R. S. The walls of the cyst are composed of three distinct coats or layers. First, a peritoneal covering; secondly, a middle fibrous coat; and thirdly a dense, membranous sac, in which the fluid was contained. In the divided pellicle are seen the cut ends of three large arteries, and of one large vein, and of the Fallopian tube. The peritoneal coat is thin, and loosely attached at the root of the cyst; but beyond this it is thick, opaque, and firmly adherent to the tissue below. The middle coat is thick at the root, and contains numerous branches of arteries and of nerves with ganglionic enlargements. It becomes thinner as it is expanded over the cyst, is of a dense, fibrous structure, and adheres firmly by both its surfaces. The internal membrane is firm and thick, and its inner surface is rough, irregularly puckered, and in some spots of a brown or yellowish colour. It consists of two distinct layers, like the coats of a Graafian vesicle. A smaller cyst is situated near the root of the larger, imbedded in its middle coat, projecting into its cavity, and invested by its lining membrane, which it has pushed before it. The lining membrane of this smaller cyst also consists of two distinct layers, like that of the larger cyst. A group of small multilocular cysts is contained in the middle fibrous coat of the great cyst, and between the outer surface of the smaller cyst and the peritoneum. They have the same structure, contain a similar fluid, and bear the same relation to one another as the two cysts above described. The author remarks that the walls of this ovarian cyst contain all the elementary structures which enter into the composition of the human ova-

rium in the healthy condition—peritoneum, stroma, and Graafian vesicles, with blood-vessels and ganglionic nerves. Whether all multilocular cysts are formed in the same manner, future observation must determine.

The author commences with the history of a case of ovarian dropsy successfully removed by a surgical operation, and reported in the *Edinburgh Medical and Surgical Journal* for 1822, by Dr. Nathan Smith, Professor of Physic and Surgery in Yale College, Connecticut. He then gives an account of an operation performed by Mr. John Lizars, of Edinburgh, in 1823, when no ovarian disease was found after the abdomen had been opened; of three other operations, by the same surgeon, when the diagnosis was more accurate, in 1825 and 1826; and of two operations by Dr. Granville, in 1826 and 1827. He then refers to an operation performed in 1833, by Mr. Jeaffreson; and to three operations by Mr. King, in 1834 and 1836. During the last twenty-seven years the operation has been attempted or performed more than one hundred and thirty times in Great Britain. Of one hundred and eight cases, of which authentic reports have been received, in thirty-seven cases either no ovarian cyst or tumour to remove existed, or there were present ovarian cysts and tumours, the removal of which was found to be impracticable, and the operation was abandoned. Of these thirty-seven cases, fourteen were fatal. The analysis given of one hundred and eight cases of ovariectomy shows that in thirty-seven, or about one-third of the whole number, it was impossible to determine *previously* whether ovarian disease actually existed, or when it did exist, whether its removal was practicable. Of the seventy-one cases in which ovarian cysts and tumours were removed, twenty-four proved fatal, in fourteen of which the operation could not be completed. In the tabular analysis of the one hundred and eight cases appended to the paper, it appears that forty-five cases are reported by Dr. Clay and eleven by Mr. Lane; and to both of these gentlemen the author expresses his thanks for the manner in which they have communicated to him the entire results of their experience of the operation.

The PRESIDENT having called attention to the importance of the paper,

Mr. CÉSAR HAWKINS rose and said—As my name has been enumerated among those who have performed this operation, it is obvious that I have been disposed to look upon it favourably, from the accounts of the cases which have been published, in which it has been done. But I must confess that for the last three or four years I have not altogether felt the same confidence in the propriety of the operation, and have seen the great necessity of the fullest information regarding it. It is well known that the operation has been very frequently attempted, and it is generally believed that a considerable proportion of the operations have been fatal, or have been impossible of completion, of which the public have no information. Nor could I overlook the fact that the operation has now been attempted by ten surgeons attached to hospitals in London; that not one of these gentlemen has performed it twice; and that of these ten cases the only one in which the patient was fortunate enough to recover from the operation was that in which I myself operated. I think, therefore, that the Society and the profession at large are much indebted to Dr. Lee for the table of cases which he has laid before us; and I feel this the more as I believe it is owing to my suggestion that he has done this; and I must say I was delighted, when I spoke to him about it, to see him take out his tablets, and enter my suggestion in his usual short-hand notes. I felt that many of the cases hitherto recorded as having been done in foreign countries, and mixed up with our own in previous tables, were not detailed with sufficient accuracy or precision to be at all relied upon as safe guides; I felt assured that a sufficient collection of English cases now existed to settle completely the great question of the principle of the operation, and that either through the right feeling of the operators themselves, or through some of their friends, authentic histories of almost every case could be obtained, whether successful or unsuccessful, by the industry and perseverance of Dr. Lee, if he undertook such an investigation. I have little doubt that I shall be able, by examining such a table, to satisfy my own mind; and I dare say some gentlemen may already have thought that if in so large a number as thirty-seven cases—a third of the number contained in the table now given to us—it were unable to have the operation completed be-

cause of adhesions, or because there was no tumour at all, that the propriety of the operation being performed in any case whatever was at once determined in the negative. But one thing has struck me with much regret, in the reading of this list of operations; I mean, the omission of the names of two gentlemen, who are generally supposed to have done this operation very frequently in London. I do not know whether these gentlemen are present in this room, but I hope that they are. It is not my intention to say anything that can be considered offensive, and I hope, therefore, that they will not be offended with me if I appeal to them, by expressing my desire that before this table is published, as I doubt not it will be, by the council, they will give the result of their experience to Dr. Lee, and that he may be allowed to incorporate their cases, with any others that he may hear of, in an amended table, with a more complete analysis of the results. One of these gentlemen, whom I venture to allude to—I mean Dr. Frederic Bird—has actually put on record, in some publication of his first successful cases, his opinion of the impropriety of withholding any information from the public with regard to this very operation. I appeal, therefore, to him with the greater confidence. He stands pledged to the profession to give them an account of all that he has done on this subject. He has a perfect right, it is true, to give this information when and in what manner he pleases; but I do hope, when a person of Dr. Lee's character and standing in the profession is endeavouring to obtain complete statistical knowledge of such a very important subject, that both Dr. Bird and Mr. Walne will consider that the time has now arrived for them to make their experience available to the profession. We shall then have ample and authentic facts to reason on, and shall be able to settle the principle of the operation at once and for ever.

Dr. FREDERIC BIRD remarked that he could not but express his surprise at the omission of his cases in the table compiled by Dr. Lee; for although he had declined giving to Dr. Lee the details of his operations, yet he had sent to him their results, and had, by letter, informed him that he had extirpated ovarian tumour twelve times—eight times successfully, and four times without success. He had declined giving to Dr. Lee any details of his operations because he objected to the manner in which Dr. Lee's tables had been arranged—an arrangement which was at least open to error, if it were not in itself erroneous. He preferred to publish his own cases; he was about doing so, and the result of his experience would be laid fully before the profession.

Dr. LEE replied that it was true that Dr. F. Bird had furnished him with the bare results of the twelve cases in which he had operated; but this information was so meagre that he could not, in justice to the completeness of the other cases in his table, add them to that document. Dr. Bird had declined to give him any further information on the matter. Besides, no mention was made in the communication of Dr. Bird of those cases in which an attempt had been made to remove the tumour without success. Under these circumstances, he had left out the cases of Dr. Bird altogether. Mr. Walne had also declined to furnish him with the particulars of his cases, and they had, therefore, been omitted also.

Dr. BIRD having been asked in how many cases an attempt had been made by him to remove an ovarian tumour in which the operation could not be concluded, said that he had frequently made small incisions into the abdominal parietes for the purpose of determining the presence or absence of peritoneal adhesions, where no other means of inquiry could determine the question. Not unfrequently cases occurred in which from the large size of the tumour, or other causes, the ordinary means of examination was insufficient, and when the only means of completing the diagnosis was that of making a small incision—a practice which he believed to be often admissible, and not less safe—the fear of subsequent peritonitis could scarcely be entertained, inasmuch, as the close adhesion of the ovarian tumour to the parietes, when such adhesions existed, prevented the peritoneal cavity from being exposed, and there was no danger of subsequent inflammation; whilst if no adhesions existed, the tumour could be removed. He believed the practice to be, when necessary, safe—speaking quite at random as to numbers. At that moment, he was almost afraid to state any number of cases in which small incisions had been employed without sub-

sequent danger—probably he might startle some gentlemen by stating as many as forty or fifty ; but of this number he was speaking quite at random, not having made any reference to his notes of cases—certainly in no instance did any bad result ensue.

Mr. CURLING inquired in how many cases patients had died after exploration.

Dr. F. BIRD.—In none.

Dr. LEE remarked that in one case explored by Dr. Bird in the Free Hospital, he had been informed the result was fatal.

Dr. BIRD.—In that case, no operation for removing the tumour was ever thought of; tapping only was resorted to, and a tube left in.

Some conversation now took place respecting the propriety of reading a letter from Mr. Chance, respecting the case under dispute ; but the chairman decided that it was not desirable to read it.

Dr. LEE said that in the table before the Society, out of thirty-seven cases in which the tumour had been attempted to be removed without success, fourteen of the patients had died. This fact was amply sufficient to show that what was called "the exploration" of these tumours was by no means a harmless proceeding.

Mr. CÆSAR HAWKINS.—I venture to rise once more, and to repeat the appeal which I before made to Dr. Bird, that his cases may be given to Dr. Lee, to be added to his table before its publication ; and I feel assured that I am only expressing the wish of every member of this Society, that every case in which the operation has been performed or attempted to be performed in this country may be communicated with the liberality which has characterized almost every one who has operated. Everything that has passed in this room shows still more strongly the necessity of this being completely done, in order that any legitimate deductions may be drawn from such a table. Dr. Bird has informed us, that besides the twelve cases in which he actually removed the ovary, of which eight were successful and four died (not communicated, however, in time to Dr. Lee), he has made incisions of an exploratory character in forty or fifty other cases, which he is unwilling to have considered as examples of the operation ; not being quite certain of the number, we will call them only forty. Now, whatever Dr. Bird may think of it, I am quite sure that no other operator will consider it a trifle to make an incision into the abdomen of several inches in length ; and all these cases ought in common fairness to be reckoned as cases of attempted ovariectomy. No doubt Dr. Bird has refused the operation in some cases, so that these exploratory openings must have been made because they were not quite so clear to him ; and in all these forty cases he was doubtless prepared had he found the operation practicable, after this incision was made, to have gone on with them to the entire removal of the tumour. Observe then the result of adding these forty attempted removals to the thirty-seven recorded by Dr. Lee ; we at once have no less than seventy-seven cases in which the operation could not be finished after it had been commenced—actually half of the entire number of operations which the table would then contain. Sir, before I came here to-night, I made this extract of what Dr. Bird has himself said—"Another and not less important source of fallacy arises from the fact that a most reprehensible practice exists of suppressing the publication of unsuccessful cases. Several such have occurred, the faithful relation of which might have shed much additional light on the operation, but are still carefully concealed from the profession." Of course, sir, I have no intention of accusing Dr. Bird of doing this, and I may be wrong in calling these forty instances in which he opened the abdomen by the name of unsuccessful attempts to perform the operation of removing the ovary ; but I have a right to think them such, unless all their details are given by him. He stands pledged to afford these details to the profession in the extract I have just read ; and although, as I before said, he has perfect liberty to do this when he thinks right, I do trust he will satisfy himself, on further consideration, that he cannot do better than take the present opportunity of giving them to a gentleman of Dr. Lee's rank in the profession, for the scientific purposes of this society.

Dr. J. B. THOMPSON said it would appear that the operation of ovariectomy was

more fatal in this climate than in the east, where he had been lately practising. In Damascus, two-thirds of the cases operated upon had been successful.

Mr. B. PHILLIPS said—I entirely concur with Mr. Hawkins in his reprehension of the practice which now so largely prevails, of publishing successful, and withholding unsuccessful cases—a practice which ought to be visited by the indignant reprobation of the profession. It is a suppression of the truth, which every honest man would condemn, and unless there be any code of honour, or morals, which allows of medical men doing what other classes of society could not do without degradation, the practice will be scouted in this society. For many years the disposition to this practice has been growing, and it has attained to such a height that we are even at this moment unable to determine the results of most of the great operations of surgery, so as to guide us in the advice we should give to our patients. Ten or twelve years ago I tried to ascertain what was the mortality after amputation; I embodied my researches in a paper which was read before this society. It was referred in the usual course, and one of the referees was so satisfied that my results were wrong that he advised the council not to publish it. This advice was followed, and the paper was not published. The years that have passed have served to show that the mortality is not as I said, twenty-three per cent., but nearer twenty-seven. If a faithful record of results had been kept, the referee, in that case, could not have fallen into such an error. No man is bound to publish his experience; but if he publish his successful experience, he is then morally bound to publish that which is not successful. He cannot honestly garble it, if the truth must be told; and the truth means the whole truth. What attached such an odium to M. Civiale's name some years ago, but that he was supposed to have told the truth in such a way as to represent an untruth? He had a large number of stone cases consigned to him for treatment by lithotripsy. He stated that he had operated on two hundred and forty-four cases, and that two hundred and thirty-six were cured. The whole truth was that he had had recourse to sounding, and other manipulations, in ninety-seven other cases, but he did not choose to complete the operation. Correctly stated, he should have said three hundred and forty-one cases, two hundred and thirty-six cures. His reverses, then, should have been stated as one out of three, instead of one out of thirty. In what particular does the revelation of to-night differ from that? We are told of twelve operations, and eight successes; but nothing was voluntarily said of forty or fifty cases, in which the operation was commenced, and could not be proceeded with. For myself, I feel utterly unable to advise a patient to submit to the operation for the extirpation of an ovarian cyst. If I turn to one side, I am assured that the operation is little short of murder; if I turn to the other side, I am told it is comparatively harmless. Is it honest that medical men, having claims to respectability, should have left us in that plight, when they possessed the means for guiding our judgment? Many of the operations of surgery are performed in our hospitals, in the face of day, and the results may be registered. The operation of to-night has not often been performed in hospitals; it has been done in private houses, to which the public have no access. Is it not, then, doubly incumbent on those who have the means to remove the veil which may conceal the results of those cases? Judged, then, by the information laid before us to-night, we find that the abdomen has been laid open many times, when there was no tumour in it; that the operation has been performed, in this country, seventy-one times; and that forty-seven have recovered; and from Dr. F. Bird's statement, it is made evident that so utterly valueless is the diagnosis that he has commenced the operation—that is to say, that he has made an incision into the abdomen “forty to fifty times” without being able to proceed with the operation. In given cases, in which the cyst was single, there was no adhesion, and the patient was healthy; the operation might, perhaps, be successfully performed, or at least it was the most likely of all cases to be successful; but it had been proved to-night that we had no means of determining the real condition of an ovarian tumour, and not even whether it were adherent or not, without the performance of an exploratory operation.

Mr. CÆSAR HAWKINS, on rising, said, I feel that I ought to apologize for rising again, after I have already spoken twice; but I am tempted to do so from what

Mr. Phillips has just said. He has spoken of cases of a single cyst in a healthy young woman, as being especially the case proper for this operation. Now, sir, I have quite made up my mind, of late, that these are especially the cases in which it ought not to be performed. I quite agree with my friend Mr. Phillips that such cases are the most likely to be successful, but I believe that ovariectomy is so dangerous an operation that we are not justified in resorting to it, and encountering so much risk, unless an urgent danger is to be avoided. I have heard some persons of great eminence speak of ovarian tumours generally as a disease that often lasts for twenty or thirty years with generally little hazard to life; I cannot myself subscribe to such an opinion, but believe, on the contrary, that it is commonly fatal in not many years, and, consequently, that in such cases the trial to remove the whole disease by operation, however dangerous, has been justifiable. I cannot but think, however, that the profession have not commonly made sufficient distinction between cases of simple serous cyst in the broad ligament of the uterus, and the cysts formed in the ovaria themselves by growth of the Graafian vesicles. In the latter only, as I think, is it that there is such a constant tendency to form the thick, tenacious mucus, which is, I presume, in reality, purulent secretion, converted into mucus by alkali, constituting a great abscess. In this only is there much risk of secondary cysts forming a multilocular tumour, and an almost invariable tendency to increased rapidity of the filling of the sac, all of which lead to a fatal result in a given number of years, and are sufficient to justify a dangerous operation, which is not proper in cases of the sacs of nearly pure water developed in the other situation. To show the great variableness with which the fluid may be secreted in cases of the serous cyst of the broad ligament, I will venture to describe the several periods of tapping necessary in a case which I believe to be of this description, the patient, however, being still alive. A young woman, when seventeen years old, began to enlarge, in the year 1834; in August, 1837, three years afterwards, I tapped her, and removed ten pints of simple watery fluid; in February, 1838, nine pints of the same transparent liquid were drawn off, being six months after the first operation; in May, 1841, eight pints were removed, being three years and three months since the last time; in May, 1842, only one year afterwards, six pints; in October, 1844, eight pints, being no less than two years and five months between the two operations. In Feb. 1846, ten pints were removed, at an interval of only one year and four months, scarcely more than half the former period. In Feb. 1849, she married, and was confined in Nov. following, after which she was near dying from a return of the dropsy, which had not been noticed till after her confinement, and may have been excited by the pregnancy; in Feb. 1850, however, she again had ten pints of the same clear fluid removed, being no less than four years from the last tapping, after which she again recovered her health. I am inclined to think, from other cases of serous cysts, that there is a greater chance of prolongation of life than in the more common tumours, whether single cysts or multilocular, which are situated in the ovarium itself, and hence I should not now think myself warranted in removing those cysts in the broad ligament, as I have hitherto done with regard to the more rapidly fatal tumours of the other description.

Dr. TILT considered that the society was much indebted to Dr. Lee for the table before them, and which must be interesting to all. It was most desirable that all the evidence respecting ovariectomy that could be procured should be brought forward, in order that we might be able to form a definite opinion on this really most important operation. In his (Dr. Tilt's) opinion, Dr. Lee had started on the right principle in this inquiry, and had refused most properly to club all kinds of cases together. He had followed out the individual history of each case, and had classified them accordingly. This was the only way in which the cases could be made valuable in determining the risk of the operation. For instance, some of the cases of ovarian disease were of a very chronic character, whilst, in others, the disease was so acute as to resemble peritonitis in a mild form. Now, it would be obvious, that to class these two forms of cases together might lead us to a most erroneous conclusion. In the chronic form of the disease, attacking patients late in life, it was, he believed, unjustifiable to operate; but in some cases, where the disease was more acute, and it

occurred between the ages of eighteen and thirty, it might be justifiable. Dr. Atlee, of Philadelphia, had operated in thirty-six of such cases; of these, twelve died, and twenty-four recovered. Looking at the mortality in those cases where no operation was performed, and to the fact that life was very rarely prolonged beyond two or three years, it would at once be seen how important it was to arrive at right conclusions respecting the operation. The question, then, immediately suggested itself as to which were the cases most favourable for operation. Upon this point we must remain in doubt, so long as fatal cases, and their histories, were withheld from publication.

Mr. B. PHILLIPS requested permission to offer a few words in explanation, after the remarks which had fallen from Mr. Cæsar Hawkins. He (Mr. Phillips) did not wish to be understood, in his remarks, to mean the ordinary serous cyst, and its ordinary termination; but he would state that he had seen ovarian tumours removed on eleven occasions. In six of these cases the cysts contained serous fluid; and of the six patients he had every reason to believe that four got quite well. It was this fact which had induced him to say that he regarded the simple serous cyst as the most likely case in which an operation would prove successful.

Mr. I. B. BROWN, speaking from considerable experience of ovarian disease, would repeat some conclusions at which he had arrived respecting its treatment. These conclusions he had read before another society, on a preceding night.

(Mr. Brown's conclusions will be found under the head of Medical Society of London.)

Mr. LAWRENCE rose and said—Mr. President, I did not attend the meeting of the society to give information, for I have no experience of ovariectomy; I have not performed it, and unless my view of the matter should be essentially altered, I never shall; nor have I seen it performed. I came, sir, to listen and to learn, and my expectations of information have not been disappointed. I have heard things strange and new, at the same time instructive. From the interesting document presented to the society by Dr. Lee, for which he deserves the best thanks of the profession, the public, and more especially of females labouring under abdominal enlargements, it appears that in thirty-seven out of one hundred and eight authenticated cases of operation collected by him, it was found, when the abdomen had been exposed, either that there was no diseased ovary, or one so circumstanced as not to admit of removal. We cannot help believing that this announcement, however unexpected and startling, represents ovariectomy in too favourable a light. Dr. Lee's list is imperfect, confessedly so; it contains only the cases of which he has received authentic accounts. There is no reason for supposing that any successful operations have been omitted. We have generally, perhaps invariably, heard of them as soon as the cicatrization of the wound had been completed. The same alacrity has not been observed in the communication of unsuccessful cases; and I am not aware that any one of the thirty-seven cases just alluded to has been published by the operator. We can hardly doubt, therefore, that if a correct list were drawn out of all the operations, the proportion of cases in which ovariectomy had been fatal would be increased, and that a considerable addition would be made to the thirty-seven instances, in which the perilous proceeding of exposing the cavity of the abdomen had been resorted to unnecessarily. Dr. Lee's list, however, as it now stands, is quite sufficient to make us doubt the propriety of admitting ovariectomy into the catalogue of recognized and approved surgical operations. We are still in the dark on one point, which ought to be ascertained before we can determine the true value of the proceeding; that is, its influence in prolonging life. Our excellent colleague may probably have acquired information on this point, in prosecuting the researches, of which he has now laid the result before the society, and he could probably render them still more complete by learning the subsequent history of the cases, in which the operation had been successful, by ascertaining the kind of health enjoyed, and the duration of life after recovery. The chances offered by the operation would be expressed by the average duration of life in those who have undergone it, if that can be ascertained, reduced in amount by a deduction, and that not inconsiderable, on account of those in whom the operation ends fatally, whether completed by removal

of the ovary or not. The result thus obtained must be compared with the probable duration of life in those patients who receive such relief as can be afforded by the other resources of art. Many years ago I saw a female from the north of England who had undergone ovariectomy, as it was reported, successfully, not very long before the time of my seeing her, the operator being Mr. Lizars. It was performed when what was then called the major incision was in vogue—that is, a cut through the parietes from the ensiform cartilage to the pubes, such as we make to expose the abdomen for examination after death. There was a sound cicatrix on the person of this female, indicating that an incision of that description had been made. The pelvic region was occupied by a large solid mass of disease. The comparison I have now suggested must be made between two sets of cases similar in their nature. Ovariectomy is not performed indiscriminately, but in selected instances. The cases chosen for operation are exactly those in which it is the least necessary, the danger to life being remote, and the patients sometimes living for years with only an occasional interruption of health and comfort. Mr. Hawkins has pointed out the important distinction between the simple serous cysts developed in the broad ligament, with their contents of watery consistence, and the more serious disease of the ovary itself, with its multiplied cysts, and their thick, variously coloured secretions. Two instances of the former kind were under my observation for many years, and I believe that both individuals are still living, although it is long since I have seen them. Elizabeth L—, a rather tall and well-made woman, who had always enjoyed good health, found a swelling in the lower part of the abdomen soon after the birth of her last child, in 1819. It gradually increased for about three years, hardly troubling her except by its bulk, which, however, had become so considerable in 1823 that relief was absolutely necessary, and I drew off in St. Bartholomew's Hospital a pailful and a half of fluid, of watery consistence, and slight whitish opacity. She soon recovered her health and strength, feeling as capable of exertion as at any period of her life, and for nearly two years she thought herself perfectly recovered. She increased in size at the end of this time, and was tapped again with the same complete relief as before. From this time to 1829 she was tapped three times, and did not swell again after the last date. I saw her in October, 1831, in perfect health, and without any abdominal enlargement. She had sometimes experienced an uneasy sense of fulness, which was relieved by purgatives. In the preceding winter she had suffered three or four attacks of spasmodic breathing. Since their cessation she had been quite well, and equal to all the exertions which her situation in life required. She had drunk nothing but water. I saw her again in June, 1842. She had lived for the preceding two years at Charlton, in Kent, enjoying excellent health, and free from every trace of her former disease. I tapped a lady for ovarian dropsy, and let out a few pints of clear fluid. She regained her former size, and considered herself quite free from disease. In four or five years she increased in bulk, and the operation was repeated, a smaller quantity of similar fluid being drawn off. I saw her again in 1842, sixteen or seventeen years after the first operation. She had enjoyed uninterrupted health since the last tapping, and nothing abnormal could be detected in the abdomen on the most careful examination. A statement more remarkable even than those in Dr. Lee's communication has come out in the course of this evening's discussion, having been accidentally elicited, rather than mentioned intentionally. A gentleman, who spoke from the middle of the room, has informed us that he had performed ovariectomy twelve times, and had intended to communicate the particulars to Dr. Lee. This list of operations, however, is of little importance, in comparison with the other matter, mentioned subsequently—viz., that in between forty and fifty cases, as I understood him, he had made an opening into the abdomen, in order to ascertain, in cases of supposed ovarian disease, whether the state of things was fit for operation; and having found that it was not, he closed the opening again. He added that not one of these persons had suffered from the proceeding. If we had not heard this report from the operator himself, we might have been excused for feeling some hesitation in giving it credit. To determine whether a diseased ovary, or other abdominal tumour, admits of excision, it must be necessary to examine the situation and connections of the part

with the hand, which would require a somewhat large cut through the abdominal parietes. To find that this could be done with impunity in between forty and fifty instances is what we should have little expected. As similar good luck could hardly be expected to attend other patients, I would caution the younger part of the company against imitating the boldness of this operator. The naked statement heard to-night does not enable us to appreciate the affair satisfactorily: we must wait for that promised publication of full details which is necessary to substantiate so novel a report. In the meantime, the simple statement, coupled with the thirty-seven cases of Dr. Lee, affords evidence of difficulties in diagnosis that must be perplexing to the ovariologist. A gentleman on the left has brought before us another proposal; that of making an incision in the abdominal parietes, and then cutting into the ovarian cyst, for the purpose of establishing a communication with the exterior, to serve as an excretory duct, or, as I think he called it, an oviduct. He is probably unaware that diseased ovaries have been dealt with long ago in various ways more or less similar to this. The result has been, I believe, invariably fatal. Ovariectomy, with all its dangers, has the merit of completely removing the disease. This plan, more dangerous than ovariectomy, would leave the disease behind, lighting up inflammation in the great mass covered by peritonæum, and in immediate contact with the abdominal viscera. Many years ago, I saw attempts of this kind in more than one or two instances: they were all fatal. The discussion of this evening, excited by the important communication of Dr. Lee, will at least serve the useful purpose of admonishing us to pause in the attempts at treating diseased ovaries by surgical operation; and, after seriously considering the matters brought to light by that communication, the forty or fifty cases from another quarter, and the proposed oviduct scheme, to ask ourselves the question whether such proceedings can be encouraged and continued without danger to the character of the profession.—*Lancet*, Nov. 23, 1850.

30. Operations for Ovarian Disease. By FREDERIC BIRD.

a. Cases in which the Tumours were removed.

Mrs. G.—Large non-adherent tumour. Present at operation, Dr. H. Roe, Mr. B. Phillips, and others. Complete recovery.

Miss H.—Large non-adherent tumour, sessile. Present, Dr. Cape, Mr. B. Phillips, and others. Complete recovery.

Mrs. W.—Large colloid tumour, generally adherent. Present, Dr. Locock, Dr. Hodgkin, and others. Complete recovery.

Miss M.—Large simple sac. Present, Dr. Ferguson, Mr. Clarke, Mr. B. Phillips, and others. Complete recovery.

— Tumour adherent to pelvis and uterus, rendering necessary to leave a segment of the cyst attached. Recovery. Present, Dr. H. Roe, Mr. Parrott, and others.

H. T.—Tumour adherent to pelvis, of great thickness. Complete recovery. Present, Dr. Elliott, Dr. Ansell, and my colleagues at the Metropolitan Free Hospital. This was the first successful case occurring in hospital practice.

Miss D.—Large sessile tumour, adhesions. Died on third day. Present, Dr. Murphy, Mr. Streeter, and others.

Mrs. L.—Tumour bound down in pelvis, causing unceasing suffering; tapping required every ten or twelve days. Died on third day. Present, Dr. Rigby, Mr. Bryant, and others.

Mrs. H.—Two large compound tumours, involving both ovaria. Complete recovery. Present, Mr. Blagden, Mr. Cholmondeley, and others.

Mrs. G.—Small tumour, non-adherent. Died on fifth day. Present, Dr. Rigby, Mr. Chance, and others.

— Large compound tumour. Died at the end of the week. Present, Dr. H. Roe, Mr. Holt, and others.

Miss K.—Large and slightly adherent tumour. Present, Dr. Protheroe Smith, Mr. Streeter, and others. Complete recovery.

— Large tumour, with very short pedicle. Present, Dr. Rigby, Mr. Skey, and others. Complete recovery.

b. *Cases in which the Tumour could not be removed.*

Mrs. P.—Very large malignant mass, inseparably adherent posteriorly. Extreme suffering from distension by solid matter, and rapidly approaching death, rendered the attempted operation justifiable. Died on the following day. Present, Dr. Rigby and others.

c. *Cases in which small incisions have been made, either to determine the existence of adhesions, or to remove unusually viscid secretions.*

Mrs. P.—Small incision, then tapped. Present, Dr. Ansell, Mr. May, and others. Is now living.

— Small incision, then tapped. Present, Dr. H. Roe, Dr. Wilks, and others. Is now living.

Miss —. Incision of rather larger size. Present, Mr. Coulson, and others. Lived two years.

Mrs. C.—Small incision, to ascertain character of adhesions, and of small tumour attached to the cyst, as well as to evacuate contents. Present, Mr. Huxtable and others. This patient was advanced in life, and exhausted by suffering. Lived six weeks.

Miss G.—Incision. Present, Mr. Streeter, in whose practice it occurred. Lived more than two years.

Mrs. B.—Incision, then tapped. Present, Dr. H. Roe, and others. Lived nearly three years.

Miss B.—Incision, then tapped. Present, Dr. Murphy, Dr. Snow, and others. Lived six months.

Miss B.—Incision, then tapped. Present, Dr. Rigby, Mr. B. Holt, and others. Is now living.

A. B.—Incision, then tapped. Tapped several times afterwards. Present, Mr. Chance, and others.

— Incision, then tapped. Tapped afterwards. Present, Dr. Rigby, Mr. Holt, and others.

Mrs. S.—Incision, then tapped. Tapped many times afterwards. Present, Mr. Holt.

Mrs. C.—Incision, not tapped. Afterwards tapped, and died. Present, Mr. Streeter.

Miss G.—Incision, to ascertain adhesions, and to remove very viscid contents. Present, Mr. Smith, Mr. Holt, and others. Died next day from bursting of a large hepatic abscess into peritonæal cavity, as proved by autopsy.

Mrs. C.—Small incision, then tapped. Subsequently tapped, and was living more than a year afterwards.

S. R.—Incision; colloid. Present, Mr. West and pupils. Was living after the lapse of ten months.

Mrs. W.—Small incision, then tapped. Present, Mr. Huxtable. Tapped many times afterwards.

L.—Incision, then tapped. Present, Dr. H. Roe, and others. Was living a year afterwards.

Miss S.—Incision, then tapped. Present, Mr. Mosgrove and others. Now living.

Conclusion.—I have thus extirpated large ovarian tumours in thirteen cases, of which number nine were successful, four unsuccessful; in one case the tumour could not be extirpated, and the patient sank. In eighteen other cases, I have made small incisions, as a means of diagnosis or relief, and in no case did a bad result ensue from such incisions, leaving a total of thirty-two cases, in the treatment or investigation of which the abdominal cavity has been incised. —*Ibid.*

31. *On the Treatment of Sprains of the Ankle.*—M. BAUDENS observes that, judging by the frequency of the occurrence of this accident, its treatment ought to be well understood and successfully practiced; but that this is in fact far from being the case, and he is therefore desirous of making his own plan of treating it, by the cold-bath and gum bandage, more extensively known.

The indications are, first, to prevent or remove inflammation, and then to secure immovability to the distended or lacerated parts, until they have recovered their power, the patient being at the same time allowed the use of the limb. For the purpose of subduing inflammation, numbers of leeches are usually applied, and then an emollient cataplasm; and M. Baudens feels convinced that it is in consequence of such treatment that degenerated sprains so often augment the number of amputations in hospitals. By free leeching of a joint, the seat of sprain, two mischievous effects are produced. In the first place, the pain, which is the first of the series of symptoms of inflammation after sprain, is increased by the leech-bites, in place of being mitigated; and, in the next, the increased afflux of blood towards the part is encouraged instead of being repelled. M. Baudens, on these grounds, strictly forbids the application of leeches in all surgical maladies attended with acute inflammation, while he often derives most excellent aid from their employment in chronic inflammations; thus, by the induction of a temporary congestion, giving a fillip to the too languid action of the part. When blood need be taken in sprain, he abstracts it by venesection, although probably both the profession and the public, from the force of habit, would tax with ignorance any one who neglected the use of leeches. As to emollient cataplasms, they favour in place of opposing the afflux of fluids to the part, while the long maceration the joint has been thus submitted to deprives it of its elasticity, gives rise to a pasty *engorgement*, and predisposes to the formation of white swelling.

M. Baudens has pursued his own plan of treatment now for twenty years, and under it his patients have been enabled to resume their trying military duties in a very short time. He is not the first who has employed cold water in the treatment of sprain; but his originality consists in trusting to it alone, and continuing its application for so long a period. His plan of employing it, contrasted with that of his predecessors, may be thus summed up:—1. *Period of the application.* Cold has usually been thought desirable only when it could be resorted to very shortly after the accident; but he applies it not only immediately, but also several hours or days after the occurrence, or even in chronic sprain—whenever, in fact, there is a *morbid degree of heat to abstract*. 2. The local bath has never been ordered by others for longer than five or six hours, although some practitioners, since his first publication on the subject, have ventured to extend it to twenty-four. In certain of his cases, however, immersion has been continued for eight or ten days, and, in one example, for fourteen days; while in no case has it been less than for two. 3. *Mode of application.* The vessel containing the water is brought to the bedside of the patient, so that he can conveniently place his leg in it, having the heel resting on a sponge at the bottom, the leg and thigh being supported by cushions, so that the position may be maintained for as many days as required. In the vessels used at the Val-de-Grace, the water reaches as high as the middle of the leg, and is changed about every three hours in order to keep it sufficiently cool. Spring-water is usually employed, and if the inflammation is intense, ice is added. A purgative is given, and, if indicated, one or two bleedings are resorted to. 4. *Effects.*—One of the first of these is the cessation of pain, which sometimes occurs at once, and at others in an hour or two. From the moment the foot is placed in the bath, the swelling becomes stationary, and soon after, with the heat and redness, decreases. About the fourth or fifth day the part becomes wrinkled like the hands of a washerwoman; and usually about the third or fourth day the patient finds the water too cold, and then the limb is removed from it—the period for doing this being regulated by the patient, he being told to keep it in only as long as he derives comfort from so doing. Few of the patients suffer from any general reaction. *Gangrene* has been said to have resulted from this application, but the author has never met with such a case. The patient sometimes persists in keeping the limb in water after the dispersion of the heat and pain, and the consequence is the production of engorgement of the joint, a tense state and dark colour of the skin, together sometimes with darkish lines—precursory signs of congelation in fact—on seeing which the joint should be enveloped in a fomentation of elder-flowers and poppy-heads at the temperature of the atmosphere. The objections which have been urged, from the fear of producing

repercussion, are quite theoretical and unfounded. It is, in fact, only the *excess of morbid caloric* that is abstracted.

Gum-bandage.—When the inflammation has been subdued, all the depressions, in the vicinity of the joint are filled with wadding, and a bandage carefully and equably applied. This is well moistened by means of a brush with very thick gum, which in a short time imparts to it almost the hardness of wood. After this has been worn for twenty-five or thirty days, it is removed, and the joint slowly and gradually exercised; for want of which precaution many patients (especially those treated by leeches and poultices) suffer all the symptoms of a sub-inflammation of the white tissues of the joints, even for years.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1850, from *Gazette des Hôpitaux*, 1850, No. 506.

32. *Dislocation of the Scaphoid Bone of the Foot*.—Dr. WALKER records in the *Provincial Med. and Surg. Journ.*, Oct. 16th, 1850, the following example of this very rare accident.

“On the 10th of June 1850, a stone mason, aged 40, and of a spare but sinewy form, in stepping from the top of a wall, eighteen feet high, to another about a foot lower, over an intervening space of about two feet, advanced his right foot, but stepped short, his toes only resting upon the wall, his whole weight being, in the act of stepping, thrown upon the right leg. The foot, as he says, “bent upwards, and something gave way.” Falling down between the two walls, he found himself on the ground on his hands and knees, not hurt, as he conceived, by the fall, but quite unable to work, and his foot in great pain. He was carried home, and I saw him next day. He was in bed, and on examination my opinion of the case entirely coincided with that of Mr. Hanbury, our excellent house-surgeon, who had previously visited him. We found a bold projection on the dorsum pedis, in the situation of the os naviculare, and a corresponding depression beneath, where, in the normal condition, the tuberosity of this bone forms a distinct projection. Over the displaced bone the skin was tense and red, and over this point there was a good deal of pain on pressure. He could bend and extend the ankle-joint without difficulty or much increase of pain. I at first tried to reduce the bone by firm pressure with the thumbs, but it felt firmly fixed in its abnormal position, and I could not move it.

“I then requested Mr. Hanbury to press the foot downwards, whilst I attempted to return the bone to its position between the astragalus and cuneiform bones, and with an audible snap it returned, and the deformity disappeared.

“I then merely directed the foot to be kept quiet and fomented; but two days after, finding that the bone felt loose and easily movable, with a tendency to slip upwards, occasioning the peculiar appearance of a slight dimple or hollow in place of its natural projection, a plaster and roller were applied.

“He was confined to the house for three weeks. He then returned to his work, but continued slightly lame for about a month after. This morning (Sept 16th) I find, on examination, no remaining appearance of injury; he has no pain, and the motions of the foot are perfect.”

33. *Ununited Fracture of the Tibia of twenty-four years' standing successfully treated*. By R. W. TAMPLIN.—Patient a young woman, aged 25; leg broke at lower-third in infancy. The fracture neglected for some years, and then a variety of treatment adopted to promote union, without success. The case was given up as hopeless, and amputation recommended by surgeons of eminence. When Mr. Tamplin saw the patient, the leg was two inches and a half shorter than the other, the upper portion of the tibia projecting pointedly forwards, and riding over the lower third; there was free movement at the point of fracture. Mr. Tamplin had an instrument so made that the thigh could be firmly grasped above the condyles of the femur, the foot below having a screw, by means of which the distance between the knee and the foot could be gradually increased. This was applied on the 31st of July, 1849, the leg kept horizontal in the extended position. Gradual extension was now commenced, and continued for four days. So much pain was occasioned in the gastrocnemius that it was found necessary to divide the tendo-Achillis. From this time the leg became gradually and easily elongated, and during the extension a steady continued

pressure was kept up on the tibia, above the point of fracture, and counter-pressure at the back of the leg, just above the ankle-joint. This treatment was persevered in unremittingly until the 9th of January, 1850, without interruption to the health, when the leg was found to be of equal length with its fellow, and the bone retained its position unassisted. Common splints, with a boot attached, were used to support the limb. On the 26th of February she could raise the leg to the horizontal position. On the 3d of April she could stand and walk without pain or sign of motion at the point of fracture. Since that time had continued to use the leg freely; could walk up and down stairs; her general health had improved, and there was every reason to believe that a perfect cure had been effected.—*London Med. Gaz.*

34. *On Primary and Secondary Amputation.*—Dr. RESTELLI, one of the surgeons in chief of the Sardinian army, in relating the surgical history of the late campaign, confirms the opinion now generally entertained by military surgeons of the preferability of primary amputations by the following statistical statement, which, although on a small scale, is very conclusive. He says that whenever an operation becomes recognized as one of undoubted necessity, he believes it the best practice to perform it at once (that is, within thirty-six hours after the injury) in place of waiting the development of fever, inflammation, and supuration, with the consequent greater liability to phlebitis, purulent infection, tetanus, visceral inflammations, &c., dangers with which the simple wound from amputation is scarcely to be compared. Acting upon these principles, he obtained the following results:—

IMMEDIATE AMPUTATIONS.			CONSECUTIVE AMPUTATIONS.		
	Recovered.	Died.		Recovered.	Died.
1 At the hip-joint .	1	0	6 Middle of the thigh .	1	5
7 Middle of the thigh .	5	2	1 At the upper third .	0	1
4 Upper third of thigh .	2	2	1 Upper third of leg .	0	1
3 Upper third of leg .	2	1	7 Upper third of arm .	2	5
10 Upper third of arm .	9	1	2 Shoulder-joint .	1	1
1 Shoulder-joint .	1	0	3 Forearm .	2	1
26	20	6	20	6	14

Thus in the immediate amputations there was a mortality of about 24 per cent. and in the consecutive ones of 70 per cent.; the fatality of these last especially referring to the lower extremities.—*Brit. and For. Med.-Chir. Rev.*, Oct. 1850, from *Annali Omedei*, vol. cxxx.

35. *Surgical Operations, in reference to the Employment of Chloroform.*—M. BOYER considers that surgical operations, in their relation to chloroform, may be thus arranged:—

1. Those in which it is a powerful auxiliary, facilitating their execution, as in the reduction of dislocations and strangulated hernia.
2. Those which are exceedingly painful, in which chloroform diminishes suffering, but does not render the operation more easily executable. They are very numerous, and this is the only point of view in which the public regards the advantage of anæsthetic agents.
3. Those in which it may become an obstruction or preventive to their execution. Thus, a patient of M. Boyer, on whom he was operating for lithotrity, became so restless under chloroform that he could not continue until the anæsthetic influence was withdrawn.
4. Those in which it may prove dangerous, as in cataract. So, too, in tedious and delicate operations performed in the vicinity of important organs; as, for example, ligature of the carotid, during which any indocility of the patient might lead to the wounding of important veins, and in some of the cutting operations in the mouth.
5. Those of a trivial character, in which chloroform is a superfluity, as the slight advantage obtained from its use does not generally compensate for the disagreeable effects produced by the inhalation, such as the smell, headache, and the kind of intoxication that results.
6. There are certain contra-indications to its use in all cases, as acute or chronic affections of the brain, liability to cerebral congestion, great debility, &c. Its employment must, therefore, not

be regarded as a mere matter of course; and surgeons, in order to prevent abuse, may often have to discountenance it.—*Brit. and For. Med.-Chir. Rev.*, Oct. 1850, from *Gazette des Hôpitaux*, No. 51.

36. *Origin of the Epigastric and Obturator Arteries by a common trunk from the Internal Iliac; with an inquiry into the amount of danger occasioned by various positions of arteries in the ordinary operations for Femoral and Inguinal Hernia.* By P. REDFERN, M.D. (*Monthly Journ. Med. Sci.*, Sept. 1850.)—In this interesting paper, the author, after describing a case met with by him, in which the epigastric and obturator arteries arose by a common trunk from the internal iliac, and referring to two similar cases, one recorded by Hesselbach, and the other by Dr. Monro, discusses the surgical relations of these deviations.

He reviews, 1st, those varieties of position in which a vessel of considerable size appears likely to be exposed to danger in the performance of ordinary operations, and the frequency of like positions; 2d, in what proportion of such operations vessels of importance have been injured in actual practice, and 3d, the probable result of future cases of injury to these vessels, by a reference to the termination of those which have already been made public.

The conclusions which Dr. Redfern draws from his investigations are :—

1st. In every possible variety of inguinal rupture, the stricture ought to be divided directly upwards, as by so doing there is not the slightest risk of hemorrhage.

2d. The probability of the occurrence of hemorrhage is much greater in operations for femoral than for inguinal hernia, as the epigastric, obturator, or internal circumflex artery may be divided in exposing the sac; and the obturator, epigastric, or a large anastomosing branch, may be injured in the division of the stricture.

3d. The varieties in the arteries named are sufficiently frequent to render them of great surgical importance, and that variety is most important in which the vessel is displaced inwards, by the descent of a femoral hernia, and becomes tensely stretched over the front and inner side of the neck of the sac.

4th. The risk of hemorrhage is not lessened by dividing the stricture of a femoral hernia in any other direction than inwards or upwards and inwards, but it is very much diminished by dividing as few of the tense fibres of the edge of the ring as possible, by avoiding a sawing motion, and by pressing the edge of the knife rather upon the anterior surface than directly on the edge of the fibres constituting the stricture.

5th. In a male, whose testis has passed into the scrotum, the spermatic artery may be wounded, and the testicle lost, by dividing the stricture at the neck of the sac of a femoral hernia upwards, and, therefore, this method of operating ought to be relinquished.

37. *Aneurism of the Femoral Artery, Ligature of the External Iliac.*—HENRY SMITH, Esq., records in the *Medical Times* a case of aneurism of the femoral artery in a man 37 years of age, in good health and temperate habits. On the 7th of August, Mr. S. applied a ligature to the external iliac, and the patient made a rapid recovery. The ligature was readily withdrawn on the twentieth day, and in five weeks after the operation the wound had healed with a firm and healthy cicatrix.

38. *Ligature of the Femoral Artery for Popliteal Aneurism.*—JAMES DRUMMOND, Surgeon, Dundee, records (*Monthly Journ. Med. Sci.*, Nov. 1850) a case of popliteal aneurism, on right side, in a seaman, 33 years of age, in which he successfully applied a ligature. The incision, except immediately around the ligature, had united in forty-eight hours; the temperature of the limb, which for the first two days was slightly lower than its fellow, was restored on the third day, and the ligature separated on the thirty-first day.

39. *On the Employment of Forced Flexion for arresting Hemorrhage in Wounds of the Palmar Arch.* By M. E. DURWELL.—A woman fell from a ladder, having a

bottle in her hand. The bottle was broken, and fragments pierced the palm. M. Durwell, on arriving at the poor woman's cottage, found the palmar arch wounded; and he had no means of securing the artery. While controlling the hemorrhage by pressure on the brachial artery, the following sentence in M. Malgaigne's *Anatomie Chirurgicale* occurred to his mind: "The only points at which obliteration of an artery can be obtained by position alone, without the aid of external compression, are at the bend of the arm and knee—a fact which is of great importance in reference to the arrest of hemorrhage." Acting upon this statement, M. Durwell immediately bent the arm on the forearm at an acute angle; the hemorrhage was instantly arrested. Advantage was taken of the circumstance to effect a definite cure. The arm was retained in its flexed position by bandages, so that the pulsation of the radial artery was completely intercepted. The wound of the hand was treated as an ordinary wound, and, for the sake of precaution, compresses were laid over the course of the arteries of the forearm. The cure progressed favorably. On the third day, as the patient complained of the restraint of the posture, the arm was slightly extended, and it was noticed that a small portion of florid thin blood oozed from the wound. The arm was restored to its flexed position, and in a short time the vessels and the external wound had perfectly healed.

In this manner a wound, usually regarded as of a very serious character, was safely and speedily cured by a proceeding as simple and unobjectionable as has ever been proposed. It must be attended with success when employed in analogous cases, and, from its simplicity, should be tried in the first instance in every case. M. Durwell observes justly that it would be rash to make a more general application of a single fact, as there may doubtless occur complications, rendering its employment impossible or unadvisable; but, at the same time, he adds that this principle may be found, by further experiment, to be useful on other occasions, for the obliteration of the popliteal and humeral arteries. This principle he lays down in the proposition—"that in most arterial lesions of the forearm and leg, prolonged forcible flexion supersedes the ligature of the vessels."—*Prov. Med. and Surg. Journ.*, Nov. 13th, from *L'Union Médicale*.

40. *On Hospital Gangrene.* By Prof. RESTELLI.—Between Sept. 1848 and Feb. 1849, hospital gangrene prevailed in the overcrowded Military Hospital of Alessandria to a terrible extent as a complication of wounds, and especially of gunshot wounds; so that above 400 cases came under Dr. Restelli's care.

Owing to the crowded state of the hospital, no classification of patients could be observed; but this gave the author the opportunity of observing that individuals suffering from contagious diseases (as syphilis) were more easily attacked by the gangrene, and that it rapidly produced in them dreadful ravages. No general symptoms usually preceded the alteration of character in the wound; and in some cases the disease continued local in its manifestations, but in several others, remittent fever was present, increasing with the progress of the disease. In some cases, there were daily paroxysms of fever and profuse sweating, simulating an intermittent fever, with which various nervous symptoms, especially those of a convulsive character were conjoined, and were of very bad omen.

In order to prove the contagious character of the disease, the author, most unjustifiable, as we think, inoculated various wounds occurring in different temperaments with some of the matter, and also inserted it subcutaneously in healthy parts. Other proofs were found in its being communicated from bed to bed during the overcrowding of the hospital, and on its having been propagated in the town by means of a dirty knife used in an operation. The author, indeed, regards the propagation of the disease as entirely affected by contact, although he allows that the bad state of the air of a crowded hospital increases the virulence of the disease. He does not believe, however, that any contagious principle capable of propagating the disease is absorbed into the system; and thus, when in consequence of the ravages of the disease, operations or amputations were required, the new surface did not take on gangrenous action, providing care were taken to prevent gangrenous matter obtaining access to it. Taking this view of the disease, it is to local treatment he looks

for a curative agent, and this may be had recourse to at any stage, if the part retains sufficient reactive power. After trying experiments with numerous caustic substances, as the strong acids, &c., he has come to the conclusion that the best application is a *solution of caustic potass*, which he considers to act not as a mere caustic, but also by neutralizing the virulence of the poison itself. On the first day, however, he applies pieces of caustic potass in substance to the wound, endeavouring to penetrate into all its sinuosities. Next day the wound is dressed with a solution of \mathfrak{Dj} ad $\mathfrak{℥j}$ of water, and every day the strength of the solution is diminished by four or five grains, to the fifth day, when the wound is simply dressed. The author declares that even the worst cases went on well after this plan was put into practice. In the subsequent treatment of the wounds, absorbent powders, as charcoal, and especially carbonate of magnesia, were of very great service.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1850, from *Annali Omedei*, vol. cxxx.

41. *On Dry Gangrene*.—Dr. DE MARTINI observes that the seat and cause of progress of spontaneous dry gangrene have not been sought for by pathological anatomists in the primary elements composing the structure of the affected parts, but in some distant points from the centre of the alterations. He is of opinion, however, that all the tissues of a part suffering from it are the seats of a *minute capillary injection*, and a *total and primary coagulation of the blood*. The most delicate capillaries are injected, they become obstructed with fibrinous coagula, and a portion of the colouring matter is effused around the anastomotic points. The papillary body loses its moistness and rose-white colour, and becomes a collection of black and hard asperities, rising from a dermis that looks as if it were carbonized. Observed through a microscope, these minute vessels seem as if injected by a substance which has hardened within them; and, in fact, so obstructed are they that when divided they do not empty themselves any more than as if they were filled with so much wax. In the adipose layer, muscles, and, indeed, all parts that the gangrene implicates, the same minute capillary injection and coagulation is observable.

In reference to the causes of this complete coagulation in the capillary circulation, the author expresses his opinion that insufficient attention has been paid to *primary lesion of the capillary innervation*. The acute, burning pain preceding the development of the gangrene, the greater disposition of the paralyzed extremity to become attacked, the commencement of the process by a complete arrest and coagulation of the blood in the capillaries (the circulation in which is under the influence of the ramusculi of the sympathetic), and the nervous disorders which frequently precede or accompany the development of the affection, lead to the belief that a primary paralysis of the capillary innervation may frequently play an important part in the induction of this gangrene.

In a *chemical* point of view, the metamorphoses which accompany dry gangrene are quite special. In gangrene, the consequence of inflammation, there is rupture of capillaries and effusion of blood, and thence a more intimate combination of its oxygen with the elements of the tissues. The effused blood coagulates, the globules and darkened hematose dissolve, and the whole organic materials of the fluid pass into a state of decomposition, which is communicated to the surrounding tissues. In dry gangrene, coagulation takes place without prior inflammation, and at the various anastomotic points, effusions forming also coagula are likewise observed. No solution of the blood, no decomposition or disruption of tissues, takes place. The structure of these undergoes little or no alteration. The physical characteristic of *inflammatory gangrene* is the changing of the organic solids into a soft, pultaceous, decomposing mass; while that of *dry gangrene* is the changing of the humours and soft parts into dry solids. The smell of rancid bacon, which the part emits in dry gangrene, and the readiness with which *mycodermes* are developed on the surface, would seem to show that the process is one of slow combustion—*eremacausis*, a process at first excited by the oxygen of the blood, and when that ceases to be obtainable, by that of the air. A foot suffering from dry gangrene, which had been amputated, was introduced under a bell containing air, together with some pieces of caustic potassa. In three days the whole of the oxygen had become consumed,

and the potass converted into carbonate. The process of *eremacausis* could not be set up in organic matter without prior enfeeblement of the vital affinities of its elements, which are dependent upon the peripheric innervation.

From what has been said, it is evident that the organic changes produced in dry gangrene are incurable, for the coagulated blood cannot resume its organic liquid state, nor can the chemical metamorphosis, affected by means of oxygen, be arrested. But this chemical process does not limit its operations to the gangrened part, since the facility of absorbing oxygen possessed by a part in a state of *eremacausis* is communicated to all matters in contact with it, so that the entire body might become involved in this slow combustion, originating in a part already dead. The indication, therefore, is not to lose time in employing internal remedies, which are always useless, but to at once remove the limb beyond the gangrened part, and then resort to means of rational treatment. Does not the *vis medicatrix* of Nature, which preserves the whole body by a spontaneous separation of a part, teach us this lesson?—*Brit. and For. Med.-Chir. Rev.*, Oct. 1850, from *Omedei Annali*, vol. cxxvi.

42. *On Fungous Tumour of the Rectum in Children, attended with Bloody Discharges.* By M. LECLAYSE.—M. Martin has already directed attention to the affection as it occurs in the adult, producing discharges which are mistaken for those from hemorrhoids. The first case occurred in a child *æt.* 5, about whom the author was consulted in consequence of hemorrhages which occurred during a prolapsus ani, and which arose from an excrescence that he at first mistook for hemorrhoids. Examining it more closely, he found it was a spongy vegetation, not unlike a portion of the placenta, which protruded from beyond the sphincter when the child went to stool, and was quite insensible to the touch. As the hemorrhage had been considerable, the fungus was touched with the nitrate of silver whenever it protruded; and owing to its softness, four or five applications, at intervals of several hours, sufficed for its destruction. In a second case, a girl *æt.* 8 had become much reduced by the quantity of blood she had lost during several weeks; and a fungous tumour, about the size of an almond, was easily removed in the same way. A third case occurred in an infant six months old, in whom efforts at stool protruded a tumour the size of a pea, which bled. The author believing it to be the germ of the fungous tumour, also treated it with caustic.

M. Leclayse believes that this affection is often mistaken for hemorrhoids; and especially when the bleedings are said to be due to internal piles. The caustic could not be applied very high up, but as the bleeding has only occurred on the protrusion of the tumour, this has been easily reached, the application being successful even when the base of the tumour could not be attained.—*Brit. and For. Med.-Chir. Rev.*, Oct. 1850, from *Rev. Médico-Chirurg.*, tom. vii.

43. *Gonorrhœa treated with Acetate of Potash.*—Mr. HILTON has endeavoured to arrest gonorrhœa without the aid of cubebs, copaiba, or other means usually adopted. The medicine he employs is acetate of potash in half-drachm doses. The following cases are selected to exhibit the results of this simple treatment:—

The first case refers to a man, aged thirty, a tailor by trade, who, when admitted, July 24th, into Samaritan ward, had been affected with a discharge for a week; the urine was very acid, and the scalding intense. The day after admission, Mr. Hilton prescribed half-drachm doses of acetate of potash to be taken three times a-day. Five days afterwards, the scalding was relieved, the urine being still acid; on the thirteenth day the scalding, though decreased in intensity, continued, and the urine remained acid; the acetate was therefore ordered to be taken every fourth hour. On the sixteenth day the scalding was trifling, and the urine acid; on the eighteenth the urine became alkaline; the scalding had disappeared, and the discharge had completely ceased for some days. The patients are always kept in the house a little time after its cessation, for fear of a relapse; and on the twenty-third day the patient was quite well, after having taken the acetate of potash three times a-day for thirteen days, and every four hours for five days.

The second case is that of a labourer, twenty-seven years of age; he had

had a gonorrhœal discharge for three weeks when he applied for admission. The treatment began in the same ward (Samaritan), on the 24th of July, as in the preceding case, and the acetate of potash, in an aqueous menstruum, was likewise ordered to be taken three times a-day. The salt is also given with advantage in camphor mixture, and Mr. Hilton often supplies the patients with the acetate in powder, desiring them to dissolve it in water themselves. Here, however, no very material improvement took place for the first fifteen days, when the scalding became less, and the discharge began to diminish in quantity, the urine being acid. Mr. Hilton now ordered the same doses to be taken every fourth hour. On the nineteenth day the scalding continued, the discharge was less, and the urine slightly alkaline. On the twenty-second, the urine became again acid, though the patient was taking the acetate every fourth hour. At this time diarrhœa set in, and the patient was precluded from continuing the acetate of potash. On the twenty-eighth day after admission, however, the use of the salt was resumed; it was taken every four hours for eleven days, when the scalding and discharge were entirely subdued. It should, however, be noticed, that even at this period the urine remained somewhat acid.

Mr. Hilton was led to give the acetate of potash a trial in cases of gonorrhœa from the following considerations: The urethra is in this disease in a highly inflammatory state, and the urine very acid; it is clear that the latter fluid in passing over an inflamed surface must tend to irritate it much, and retard the diminution of the inflammation. The acetate of potash, by its tendency to render the urine alkaline, will therefore remove one of the obstacles which lie in the way of the cure. This same salt has likewise most undoubted depurating properties, and its antiphlogistic powers are very remarkable. Its administration, therefore, will have the double advantage of rendering the urine less acid and irritating, and of reducing inflammatory action all through the system, and as a consequence in the urethral mucous membrane.

Mr. Hilton does not deny the modifying properties of copaiba and cubebs, but he considers that the acetate of potash renders great service in those numerous cases where, from many different circumstances, neither copaiba nor cubebs can be taken. He often uses the latter therapeutical agents when the disease has been subdued by the above-named salt; a few doses of copaiba then complete the cure, and are likely to prevent relapse.—*Lancet*, Nov. 1.

MIDWIFERY.

44. *On the Causes of the Non-success of the Cæsarian Operation.*—Dr. ROUBAIX, of Brussels, has published (*Encyclographie Médicale*, June,) an elaborate memoir, in which he passes in review various questions connected with this operation. As, for instance, whether the danger of the operation consists in the incisions themselves; whether it is the result of some error in the operative proceedings, or is induced by the circumstances under which the operation is performed; and, lastly, whether, by any modification of operation, greater success can be insured? These are the problems which the author attempts to solve:—

1. *Does the danger of the operation depend on the dangerous consequences of the incisions?* In answering this question, the author divides the tissues incised into three categories—the first comprising the abdominal parietes, the second the peritoneum, the third the womb.

Respecting the first of these he observes that little need be said, as wounds of the integuments of the abdomen do not differ from ordinary wounds; the danger is in the incising the peritoneum and womb.

He further states that, judging by the analogy of other operations in which the peritoneum is interested, we cannot consider the danger to be in the incision of the membrane, as in the case of hernia, and in many severe accidental wounds, the peritoneum is often extensively injured without bad consequences. In the lower animals, the operation of spaying is another instance in point. So also wounds of other serous membranes, as the pleura, are comparatively harmless, as long as the important organs of the chest are uninjured. In the

operation for cataract, again, the serous membrane of the eye is perforated without danger; and the same may be said of hydrocele. On these grounds, the author considers that the danger of wounds of serous membranes has been greatly exaggerated, and he thinks this arises, probably, from the intense pain which inflammation of these tissues gives rise to. He concludes, upon the whole, therefore, that the dangers of the Cæsarean operation are not due to wounding the serous membrane abstractedly considered.

Is it, he next inquires, the incision of the uterine parietes which causes the risk? Here he reminds us that it is a complicated and delicate organ which is wounded, and that it consists of serous membrane, muscular fibre, vessels, nerves, and mucous membrane. But muscular fibres, nerves, and vessels are wounded in amputating without similar risk; and no surgeon hesitates to incise the mucous membrane of the mouth, nose, &c., wherefore he formally decides that division of the uterine tissues likewise is not the essential cause of the mortality of the Cæsarean operation. He next inquires—

2. *Is the danger of this operation due to error in its details, or in the subsequent dressing?* In replying to the second query, the author reviews the several steps of the operation after the following manner:—

Everything being ready, the surgeon first divides the abdominal integuments, and, according, to general practice, when he arrives at the peritoneum, he makes an opening just sufficient to admit the finger, with which he raises the peritoneum while he makes the necessary incision. Now, in so doing, he not only admits air, but also the flow of blood into the peritoneal cavity. The surgeon in the next place opens the uterus, from which floods of blood pass into the abdomen. The amnios is next opened, and its contents are also effused. The infant and secundines are then taken away, the clots of blood removed, the intestines pushed back, and the external wound is closed.

We need only, observes the author, reflect an instant to perceive—1. That air enters the peritoneal cavity, and sometimes into the uterine sinuses. 2. That blood and liquor amnii, and subsequently the lochial discharge, may also escape into the same cavity. These are in the author's estimation the real causes of the fatality of the operation.

The evil consequences of the admission of air into the tissues are daily observed in surgery. A simple fracture is a trifling accident, but a compound fracture of the same bone is a serious affair. To open a large chronic abscess is often to give rise to a train of fatal symptoms; if, however, the admission of air be prevented, no such evils appear. It is the same in empyema and punctures of joints. Again, it is well known that to open ganglions is dangerous, but to rupture them under the skin gives rise to no unpleasant effects. Many other instances might be cited to exhibit the pernicious effects of the contact of air, but the multiplication of evidence would be useless.

The entrance of air into the uterine sinuses during the Cæsarean operation, the author thinks, has been too much overlooked. He observes that the anatomical construction of these sinuses is such as to favor the admission of air, which is one of the most dreaded contingencies of surgery. That the distance from the heart is no preservation, the author shows by referring to instances in which air has entered these sinuses during labour, in sufficient quantities to cause instantaneous death. Although this may not be the effect of the accident in the Cæsarean operation, sufficient air may be admitted to give rise to the most fatal form of phlebitis.

The effusion of blood into the peritoneal sac is regarded by the author as another obstacle to success, for whatever pains may be taken to remove it there will always be sufficient left to excite inflammation and its consequences. The presence of the liquor amnii also, though not so injurious as air or blood, is, nevertheless, to be considered as more or less injurious.

Thus the introduction of air, of blood, and of liquor amnii, are accidents which are in a measure inherent to the Cæsarean operation, and are sufficient, in the author's opinion, to explain a great portion of the ill consequences of this severe operation. He next inquires what amount of mischief may also arise from improper after-management. He alludes to the practice of applying refrigerants and topical astringents to the uterine incision, as well as the prac-

tice of preventing union by first intention, by which an additional cause of irritation is allowed, in the escape of the lochia into the peritoneum.

3. *Are the dangerous results of the Cæsarean operation in anywise attributable to the circumstances under which it is performed.*—This is the third query which the author proposes, and which he at once answers in the affirmative. It is a point of great consequence in all operations, if possible, to make incisions in healthy tissue, but in the Cæsarean operation this is often impossible, from the fact that the operation is too often delayed, and not attempted until the uterus is fatigued by useless efforts, and the soft parts are more or less bruised and injured by imperfect attempts to deliver *per vias naturales*. It is, therefore, he considers, a matter of great consequence as regards the probabilities of success, not to postpone the operation too long. Once that it is decided that delivery in the ordinary way is impossible, no time should be thrown away in fruitless endeavours to deliver.

4. We now come to the last question—*Is it possible to diminish the chances of failure by any modification in the operation?* This question also the author answers confidently in the affirmative, and gives the certain rules for accomplishing the safety of the patient. These are:—

1. To prevent the entrance of air into the peritoneal cavity and the uterine sinuses.
2. To prevent the effusion of blood and liquor amnii.
3. To make the incisions in such a manner that union by first intention may be encouraged as far as possible.
4. To take precautions against inflammation of neighbouring tissues.
5. To perform the operation at a favourable time.

All these rules are exemplified in the following description of the operation:—

Labour should be allowed to progress until the os uteri is well dilated and the membranes present. The rectum having been previously emptied, the patient is then to be placed on a narrow couch, with cushions under the loins, so as to cause the abdomen to project, the thighs are to be shortly flexed, and the bladder emptied by the catheter. Two assistants should be placed, one on the right side, and the other opposite the patient's left thigh. These two assistants are then to maintain a steady pressure on each side of the abdomen.

All being thus arranged, the operator, placed on the right side, proceeds to make an incision in the median line, from the umbilicus to within an inch of the pubes. When he arrives at the peritoneum, he is to open it carefully on a director, previously taking care that the assistants make so close a compression as shall as much as possible prevent the admission of air. The womb is now laid bare, and the next step is to incise it in the median line down to the membranes. If the assistants do their duty, the blood which now pours out should scarcely, if at all, penetrate into the peritoneal sac. Now is the moment to rupture the membranes, and allow the escape of the liquor amnii *per vaginam*. When it is thoroughly emptied the membranes are to be incised, and the child and after-birth carefully extracted.

When the hemorrhage has ceased, the parts are to be gently sponged, and sutures are to be inserted, the entire length of the incision, in the abdominal parietes, and compresses and bandages are to be so applied as to take off the traction upon the points of suture. The after-treatment should consist in catheterism, two or three times a-day, and careful regulation of diet. Vaginal injections should be avoided, for fear of the fluid gaining access to the peritoneum. If the wound does not heal by first intention, it must be healed on the ordinary principles as a suppurating wound.—*Prov. Med. and Surg. Journ.*, Oct. 30th, 1850.

45. *Cæsarian Operation.*—M. NIMMO, Esq., of Dundee, relates (*Month. Journ. of Med. Sci.*, Sept. 1850) a case of impracticable labour, in which the Cæsarian operation was performed unsuccessfully to the mother, and gives the following table of forty-seven cases in which the operation has been performed in Great Britain and Ireland. Among these, only seven of the mothers were saved, and forty died. Of the children, twenty-six were saved, and twenty-one lost.

No.	Date.	Operator, or Authority.	Hours in Labour.	Causes.	Result to Mother.	Result to Child.	References.
1	1739	Mary Dunelly, midwife.	12 days.	....	recovered.	dead.	Ed. Med. Essays, vol. v. p. 439.
2	1737	Mr. R. Smith, Edinburgh.	7 days.	....	died.	alive.	Snellie's Mid., vol. iii. p. 423.
3	—	Professor Young, do.	....	....	died.	alive.	MSS. Lectures.
4	—	Ditto.	....	....	died.	alive.	Do.
5	1740	Dr. White, Manchester.	....	....	died.	dead.	Hull's First Letter.
6	—	Dr. Wood, Edinburgh.	....	....	died.	dead.	Do.
7	1769	Mr. Thomson, London.	24 hours.	....	died.	dead.	Med. Obs. and Enq., vol. iv. p. 261.
8	1774	Dr. Cooper, London.	2 days.	....	died.	alive.	Do.
9	1774	Mr. Chalmers, Edinburgh.	12 days.	moll. ossium.	died.	alive.	Do.
10	1775	Mr. White, Glasgow.	....	....	died.	dead.	Hamilton's Outlines, p. 339.
11	1777	Mr. Atkinson, Leicester.	....	....	died.	dead.	Hull's Letter.
12	—	Mr. Clark, Wellingburgh.	8 days.	moll. ossium.	died.	alive.	Hull, p. 67.
13	1793	Mr. Barlow.	3 days.	....	died.	alive.	Mem. Med. Soc. vol. v.
14	—	Dr. Hull, Manchester.	5 days.	distortion.	died.	dead.	Mem. Rec. and Res. p. 154.
15	1794	Dr. Hamilton, Junr., Edinburgh.	12 hours.	moll. ossium.	recovered.	saved.	First Letter, p. 162.
16	1795	Dr. Hull, Manchester.	2 days.	malacocephalon.	died.	alive.	Outlines.
17	1798	Mr. Kay, Forfar.	10 days.	....	died.	dead.	First Letter, p. 172.
18	1799	Mr. Wood, Manchester.	3 days.	malacocephalon.	died.	alive.	Hull's Letter.
19	1800	Mr. John Bell, Edinburgh.	....	distortion.	died.	saved.	Mem. Med. Soc., vol. v.
20	—	Mr. Dunlop, Rochdale.	....	....	died.	alive.	Med.-Chir. Trans., vol. iv. p. 347.
21	—	Mr. Wood, Manchester.	....	....	died.	alive.	Hull's Baudeloc, p. 134.
22	—	Dr. Kellie, Leith.	....	....	died.	alive.	Med. and Phys. Jour., vol. vi. p. 346.
23	—	Barlow and Cort, Blackburn.	24 hours.	....	died.	dead.	Ed. Med. and Surg. Jour., vol. vii. p. 11.
24	1817	Barlow and Dugdale.	....	....	died.	dead.	Med.-Chir. Trans., vol. vii. p. 264.
25	1821	Dr. Henderson, Perth.	....	....	died.	alive.	Barlow's Essays.
26	—	Dr. Radford, Manchester.	18 hours.	distortion.	died.	alive.	Merriman, p. 317.
27	1820	Ditto.	34 hours.	distortion.	died.	alive.	Do.
28	1821	Ditto.	19 hours.	distortion.	died.	dead.	Ed. Jour., No. 146.
29	—	Ditto.	53 hours.	....	died.	dead.	Do.
30	—	Ditto.	....	....	died.	dead.	Ranking, vol. x. p. 212.
31	1849	Ditto.	3 days.	....	recovered.	saved.	Do.
32	1826	Mr. Orlinton, Dundee.	6 days.	....	recovered.	saved.	Prov. Med. and Surg. Jour. for 1849.
33	1829	Dr. McKeelin, Belfast.	....	exostosis.	died.	dead.	Ed. Med. and Surg. Jour. for 1828.
34	1827	Mr. Knowles, Manchester.	....	....	died.	dead.	Do. for 1831, p. 352.
35	1829	Mr. Ward.	....	....	recovered.	dead.	Trans. of Prov. Assoc., vol. iv.
36	1833	Mr. Greaves, Rockingham.	....	....	died.	dead.	Lancet, March 28, 1840.
37	1834	Dr. Montgomery, Dublin.	27 hours.	distortion.	recovered.	saved.	Lancet for 1833-34, p. 148.
38	1843	Dr. Elliot, Waterford.	....	fibrous tumour.	died.	dead.	Dublin Jour., vol. vi. p. 418.
39	—	Dr. Whitehead, Manchester.	....	distortion.	died.	dead.	Letter to Dr. Churchill.
40	—	Mr. Braid, Manchester.	....	....	died.	alive.	Do. do.
41	—	Messrs. Bailey and Hardy.	....	....	died.	dead.	Ranking, vol. vii. p. 330.
42	1845	Mr. Goodman, Manchester.	....	....	died.	dead.	Do. do.
43	—	Mr. Ross, Glasgow.	5 days.	distortion.	recovered.	saved.	British Obstetric Record, vol. i.
44	1841	Mr. Lyon, Invergowrie.	....	tumour.	died.	saved.	Ed. Mon. Jour., Dec. 1845.
45	1847	Mr. Skey, London.	....	....	died.	alive.	Do. for 1842.
46	1849	Mr. Campbell, Lisburn.	....	distortion.	died.	dead.	Lancet for 1847.
47	1850	Mr. Nimmo, Dundee.	17 hours.	distortion.	died.	saved.	Ranking, vol. x. p. 330.
							Ed. Mon. Jour., Sept. 1850.

46. *Sudden death seven hours after delivery—air found in the Heart.*—SAMUEL BERRY, Esq., records in the *Prov. Med. and Surg. Journ.* (27 Nov. 1850), the following interesting case of sudden death after a natural labour, concluded within the ordinary period, and unattended by the unusual loss of blood.

The patient, aged twenty-two, pregnant with her first child, was taken in labour on the 16th of June, and she was delivered the following evening of a male child. In twenty minutes after the birth of the child the placenta was naturally expelled, with but little loss of blood. At half-past eight o'clock she was very comfortable, and at ten o'clock was carefully put to bed. At eleven o'clock she took some gruel, and expressed herself "as feeling as comfortable as she could expect." Her husband then lay by her side. About one o'clock in the morning of the 18th, he became alarmed by her difficult breathing and feeling of faintness. He immediately sent for Mr. Dyer, but before he arrived, at two o'clock, she was dead. She lived seven hours after her delivery. The cause of death could not be accounted for, as there was no hemorrhage, and apparently nothing in the condition of the patient to prognosticate such a termination. A *post-mortem* examination was allowed, and was made early in the morning of the 20th. The body was well formed and nourished. A thick layer of fat existed in the abdominal coverings. Upon opening the abdominal cavity, the uterus was seen midway between the pelvis and umbilicus; the peritoneum covering it and the intestines was healthy, but pale. The stomach contained a small quantity of fluid. Liver healthy. The kidneys presented a granulated appearance, and the urine which remained in the bladder was ascertained to be, by the application of heat, slightly albuminous. Upon cutting into the uterus it was found empty, and the vessels where the placenta had been attached patulous. The vagina contained, at its superior part, a moderately-sized clot of blood. Within the chest, both lungs were congested, and contained scattered tubercles in their upper lobes. The heart was the size of a male heart, and apparently distended. Upon making an incision into it, *a gush of air escaped, and the organ became flaccid: no blood was found in its cavities.* About one ounce of serum was observed in the pericardium. The brain was healthy in every respect. No signs of decomposition existed in any part of the body.

Olivier, in the article "Air," in the *Dictionnaire de Médecine*, p. 73, when referring to Legallois' experiments on the inferior animals, in which he had found sudden death occur from air penetrating into the vena cava inferior and heart, by the uterine veins, in female pregnant animals, asks the following question: "Is it to a cause of this kind that we ought to attribute the sudden and unexpected death in females lately delivered, and where the autopsy disclosed nothing which could account for such a catastrophe?"

47. *On a Stethoscopic Sign of the Detachment of the Placenta.*—M. CAILLAULT states that repeated observation has shown him that, at the moment of the detachment of the placenta from the uterus, a peculiar sound is produced, feeble at first, increasing in intensity in proportion as the uterine contraction becomes more energetic, and then becoming less audible, until it disappears. He says it consists of a small cracking sound, very frequently repeated, and which may be roughly compared with the noise produced by running the nails over a straw-bottomed chair.—*Brit. and For. Med.-Chir. Rev.*, Oct. 1850, from *L'Union Médicale*, No. 81.

48. *Researches on Human Gestation.*—M. COSTE read an essay to the Academy of Sciences, Paris (Oct. 21, 1850), in which he stated the results of his examinations of the bodies of women dying suddenly from violence, or by suicide, at different periods of gestation.

In the bodies of all women dying suddenly during or immediately after menstruation, examined by M. Coste, he has found the uterus lined by so thick a mucous membrane that, if its constancy had not proved it to be normal, it must have been regarded as a morbid product. This membrane was formed of glandules having orifices for the most part visible to the naked eye. In thickness it was equal to a fourth or a third of the muscular substance, and, in some instances, presented convolutions or folds pressed one against the other. In

extra-uterine pregnancies this mucous membrane was thicker, and its convolutions as large as those of the cerebral surface, having a breadth not less than ten millimetres (=1 centimetre, or .393 Eng. in.) From these facts, M. Coste considered it demonstrated that every time an ovum arrives at maturity in or is detached from the ovary of a woman, the uterine mucous membrane undergoes a change to prepare for its reception.

M. Coste has also examined the Fallopian tubes with a view to ascertaining whether in the pregnant state these remain free and pervious, or whether their uterine orifices become closed by a membrane which is to form the decidua. The result of his researches lead him to assert that their orifices remain open, and that the ovum falls into the cavity of the uterus, unless any abnormal cause obstructs its descent.

The changes which the ovum, &c., then undergo were thus stated by M. Coste:—

From the twentieth to the thirtieth day after conception, the uterine orifices of the tubes communicate freely with the cavity of the uterus, the mucous membrane is thickened. The ovum, instead of being free in the uterine cavity, is buried in the mucous membrane; so that, on first opening the uterus, the existence of pregnancy might be doubted. Consequently, M. Coste considers that normal pregnancy may be said to be at first interstitial growth. The ovum continues progressively enlarging, distending its covering of hypertrophied membrane; this distension going on, the ovum sensibly protrudes into the uterine cavity, attached by its opposite aspect to the base of the mucous membrane. The projecting portion becomes what anatomists have named the reflected decidua; that portion which remains attached to the muscular surface becoming the placental decidua; the rest of the mucous covering of the ovum becomes its parietal or uterine decidua. These three deciduæ possess the same organization as the mucous membrane whence they are derived, and it is only by the progress of development that they lose this character.

It is not, then, necessary, M. Coste remarked, to have recourse to the pseudo-membrane of Hunter, in order to explain the formation of these parts of the decidua: the development of the mucous membrane of the uterus is sufficient to explain the phenomenon. If these portions of the decidua be but modified mucous membrane, they should be cast off after delivery—and this is precisely what occurs; and the mucous membrane of the uterus is regenerated after all the débris of the decidua have been cast off with the lochial discharge.

This explanation of the nature of the mucous covering of the ovum, M. Coste considered, throws much light on certain otherwise obscure phenomena—*e. g.*, post-partum hemorrhages, the lochia, the propagation of puerperal inflammation by infection, and certain irremediable forms of sterility.—*Lond. Med. Gaz.*, Nov. 1850.

49. *Examination of the Genital Organs of a young Woman who was assassinated during Menstruation.*—The researches of Bouchet, Bischoff, and others, have satisfactorily shown that menstruation coincides with the spontaneous maturation and discharge of ova. An observation by M. JAUZER (*Medicinische Annalen*) adds another to the many instances already recorded which countenance the ovular theory.

The young woman who forms the subject of the present case commenced to menstruate four days prior to her murder. The *autopsy* was made sixteen hours after. The surface of the left ovary presented a dark red spot, surrounded by minutely injected capillary vessels; this spot was formed by a little globular mass embedded in the ovary. The mass in question was separated from the tissue of the ovary by a thin yellowish envelope, composed of fibres intermingled with fat globules. In close apposition to this membrane, a small irregular spherical body was seen, composed of cellular tissue and fat.

The right ovary contained two corpora lutea, the Fallopian tubes were swollen and contained a fluid resembling and composed of epithelial scales. There was no trace of an ovule, or of spermatozoids. The uterine mucous membrane was injected and had a velvety appearance; it was easily detached with the scalpel. It was evidently thickened and was covered with a thin mucous secretion.

From this case it appears that the uterine mucous membrane, at the menstrual period, assumes an appearance analogous to that which it puts on during gestation, especially as regards the development of the mucous follicles.—*Provincial Med. and Surg. Journ.*, Sept. 18th, 1850, from *Medicinischen Annalen*.

50. *A new Japanese remedy for Sterility.* By E. WILLIAMS, M. D.—Amongst the many botanical remedies that popular experience has made common in Japan and China, is one that is believed to exert specific influence upon the uterus, more particularly in cases of sterility and checked menstruation; and from the numerous cases in which I have administered it with advantage, I am inclined to think it will become a valuable addition to our materia medica.

The tree from which the preparation is made that possesses the virtues ascribed to it is, no doubt, one of the order Ternstroemaceæ of Jussieu, growing to the size of the English laurel, with leaves somewhat larger than the congou tea, and botanically it may be described as leaves lanceolate, alternate, serrated, downy on the under side, and emitting when bruised a strong odour resembling pulegium and sabina. Its properties are said to vary considerably with the age of the tree, likewise as to its being gathered at the full or wane of the moon, and as to the season of the year. It is perennial, and grows best in moist and sheltered places.

The mode of preparation is to take a quantity of the leaves, macerate them in as much rice-spirit (samshu) as will just moisten them for six hours; then express and give about a teaspoonful every hour, and two or three doses will invariably bring on the menstrual secretion, which can be maintained by a dose or two daily for any length of time.

Females in the healthy state are expected to menstruate in their eighth year in Japan and China, and should they not do so they are ineligible for betrothal; therefore recourse is had to the *key tu sing* with certain results.

To ensure its success, according to popular belief, the leaves must be gathered by a virgin, the while using certain cabalistic formulæ, at the full of the moon, and during the burning of a certain number of highly perfumed jop-sticks.

When required for the purpose of obviating sterility, the tree must be in its second year, and also gathered with certain prescribed formulæ at the wane of the moon, and equal parts of the root must be added to the preparation, which is made in the same manner as the preceding receipt.

That the root is aphrodisiac in its effects I have not the slightest doubt, as I have administered it to animals with obvious results, and without any ill-effects even to mules and castrati.—*Lancet*, Sept. 14th, 1850.

51. *Drs. Barnes and Sachs on Anæsthesia in Midwifery.*—Dr. ROBERT BARNES has published in the *Lancet* for July 13th and 20th, 1850, a tabular analysis of twenty-seven cases of natural labour in which chloroform was administered, by Dr. SACHS, in the Berlin Lying-in Hospital, and has appended some comments on the use of anæsthetic agents in midwifery. He is a strong opponent of this practice; and, in seeking to substantiate his opinions by the facts contained in Dr. Sachs' cases, he sometimes slightly transgresses the bounds of legitimate deduction. Allowing, however, for his being occasionally led away by preconceived notions, his remarks are worthy of much attention. The registered opinions of the opponents of anæsthetic midwifery now before us are particularly valuable, as they are accompanied by a statement of facts, from which the reader may draw his own conclusions. The time is approaching, when, from a full and honest comparison of data, the proper mean of the use of anæsthesia in obstetric practice will become fixed. The antagonism of parties is rapidly subsiding; for now the intoxication by chloroform of all parturient women (as a matter of routine) has happily very few advocates, though an increasing number of sound practitioners are in favour of the practice in certain cases.

The following is the table of Dr. Sachs' cases, as drawn up by Dr. Barnes:—

TABULAR ANALYSIS OF TWENTY-SEVEN CASES OF NATURAL LABOUR, IN WHICH CHLOROFORM WAS ADMINISTERED BY DR. SACHS.

No.	Age, etc.	State of labour.	Effects of Inhalation on			Remarks.	Result to	
			Pulse and Respiration.	Uterus.	Sensation.		Mo.	Chd.
1	24, prim.	24 hrs., pains strong ev. 3 min.	P. r. from 78 to 102; f. to 90. Resp. r. fr. 24 to 36, f. to 28.	Pa. stopped for 7 min.; ret. weaker and seldomer than bef. inhal.; rec. strength when eff. of inhal. had gone off.	Loss of cons. and sens., screamed at passg. of head.	... ..	R.	R.
2	21, prim.	20 hrs., memb. rupt., pa. of uncertain freq. and strength.	P. somewhat dim. in freq.	1st inh.; pa. repeatedly stopped by renewed inhal. 2d. inh., compl. relax.; no percept. eff. on pains.	Groaning and weeping.	Quiv. of lips, shuddering dur. pains. Shiver. after del.	R.	R.
3	21, prim. (twins)	20 hrs., memb. rupt.; hd. down; pa. ev. 2—3 min.; str. reg.	P. 90, somewhat incr.	Did not aff. contr., or retard del.	Groaned as in pain.	Some fever; headaches aft. del.	R.	B. alive, d. after.
4	29, mult.	Hd. ent. pelvis.	... ..	Seemed to incr. intens. of contr. and lab.	Shrieked at pass. of head: recol. nothing.	... ..	R.	R.
5	27, prim.	Hd. deep in pelv.; memb. rupt.; os ut. compl. dilat.	1st inh., P. 92, f. to 72; last inh., snortg. resp., 44; p. 68.	Pa. arr. at first; ret. of full str.	Groaning; at one time gt. restlessness. and tossing abt.; recol. nothing.	... ..	R.	R.
6	23, prim.	12 hrs.; hd. deep; memb. rupt.; pa. str., ev 2 to 3 min.	P. 82, f. to 76; r. to 80 on awakg.	Pa. compl. arr. 7 min.; then ret.	Cried out as shoulders passd. while still under chl.	... ..	R.	R.
7	33, mult. two. former lab., not easily term. in 6 hours.	9 hrs.; hd. high; memb. not rupt.; os ut. not fully dil.; pa. short, ev. 4 min.	P. 82, r. to 96, f. to 80,	1st inh., pa. arr. 6 min. then ret. 2d inh. pa. arr. 9 min.; ret., and memb. broke. 3d inh., pa. arrest.	Groaned; tossed about just before birth. Recoll. nothing.	... ..	R.	R.
8	20, mult.; form. lab. quick.	Hd. near ext. parts, very strong pa. every 2 to 3 min.	P. 96, unalt.	Pa. not arrest.	... ..	... ..	R.	R.

No.	Age, etc.	State of labour.	Effects of Inhalation on			Remarks.	Result to	
			Pulse and Respiration.	Uterus.	Sensation.		Mo.	Chd.
9	prim. (twins)	Memb. not rupt.; os ut. ptly. exp.; pa. mode- rate.	P. 81, r. to 102.	Pa. arr. 3 times, ret. weaker as chlor. went off.	Groaned; recoll. feel- ing pain.	Metritis and dysentery after deliv.	R.	B. alive, d. after.
10	25, prim.	Hd. near outlet; pa. strong.	P. 68, r. to 88 and 96, became irr.; resp. r. to 48, f. to 24	Lab. slightly arrested.	Groaned; recoll. no- thing.	2 hrs. after del. had conv.; had been epil.; d. in 19 hrs.	D.	R.
11	33, prim.	Hd. above outlet, pa. good and str., ev. 2 to 3 min.	P. 96, then 90 to 86; resp. incr. to 36.	Pa. arr. for 11 min.	Uneasy movements during pa.	... ..	R.	R.
12	24, prim. (Absc. of labia.)	Hd. at outlet; memb. rupt.; os fully open; pa. ev. 2 to 3 min.	P. 112, f. to 88; resp. 60.	Pa. arr. for a time.	... ..	Perin. some- what torn.	R.	R.
13	Prim.	Hd. at outlet, emerging.	... ..	Lab. not arrested.	... ..	... ..	R.	Pu- trid.
14	27, mult.	Hd. near outlet; memb. rupt.; pa. strong, freq.	P. 88, f. to 84—92; resp. 20, r. to 28—42.	Pa. compl. arr.; uter. relax.; ret. when chl. went off. Eff. on lab. com- plete failure.	Groaned and com- plained at ev. pa.	... ..	R.	R.
15	30, mult. (4 easy lab.)	Hd. at mid. of pelv.; memb. rupt.; os exp.; pa. str. ev. 2—3 min.	P. not af- fected; resp. accel.	Pa. delayed somewhat.	Answered quest., felt no pain.	... ..	R.	R.

QUANTITY OF CHLOROFORM SMALLER; LESS DEGREE OF NARCOTISM INDUCED.

16	Mult.	Hd. at outlet; pa. strong.	... ..	Lab. not delayed.	... ..	... ..	R.	Pu- trid.
17	22, prim. (period head- aches.)	Hd. at outlet; memb. rupt.; pa. str., very painful, inclin. to delir.	... ..	Pa. slightly affected.	Groaned.	Strong shivering foil. deliv.	R.	R.
18	Sec. child. (1st labour pain- ful.)	Hd. at outlet; memb. rupt.; pa. every 3 min.	... ..	Pa. stopped 5 min.; ret. as before when chl. discontinued.	Refused to renew inh.	... ..	R.	not mntd.

No.	Age, etc.	State of labour.	Effects of Inhalation on			Remarks.	Result to	
			Pulse and Respiration.	Uterus.	Sensation.		Mo.	Chd.
19	37, prim.	14 hrs. in lab.; hd. at outlet; memb. rupt. artificially; pa. reg. ev. 2 min.	P. 112, f. to 75, r. to 100; resp. 55, f. to 48.	Pa. slightly enfeebled at 1st inhal.	... ..	Perin. somewhat torn.	R.	R.
20	24, prim.	Hd. at outlet, pa. str. and freq.	P. 76, r. to 81; resp. 20, r. to 24.	Pa. slightly aff.	... ..	Perin. torn to ext. of 1 in.	R.	R.
21	21, prim.	Hd. at outlet.	... ..	Pa. weak at first; afterw. recov.	Hd. nearly born when chl. commenced. Under infl. 11 min.	... ..	R.	R.
22	26, 2d chd. (1st labour easy.)	Hd. at outlet; pa. str. ev. 1, 2, 3, 4 min.	... ..	Pa. increased.	Hd. at point of expuls. when chl. comm.	... ..	R.	R.
23	32, prim.	Hd. at outlet.	P. 104, r. to 120, f. to 96; resp. 32, 30, 48.	Pa. not affected.	Ditto.	... ..	R.	R.
24	27, 2d chd.	Hd. at outlet; pa. ev. 2 min.	P. 72, r. to 82; resp. 30, r. to 36.	Hd. quickly expelled.	Ditto.	... ..	R.	R.
25	24, prim.	Hd. approaching outlet; pa. ev. 2 min.	P. 60, r. to 68, then f.; resp. 30. r. to 38.	Pa. somewhat ret. at first; chd. b. 39 min. after inh. consc.	... ..	... ..	R.	R.
26	35, prim. (chron. bronc., anasa.)	Hd. near outlet.	P. 88, f. to 72; resp. snorting, deep, 30.	Pa. arr. at first.	Groaned during pa.	Perin. torn sev. lines.	R.	R.
27	20, prim.	Hd. appr. outlet.	P. and resp. little aff.	Pa. slightly retarded.	... ..	... ..	R.	R.

We now proceed to give an abstract of the remarks made by Dr. Barnes on the various points of interest presented in the above table.

1. EFFECTS OF CHLOROFORM ON THE UTERINE CONTRACTIONS. Dr. Barnes says: "Out of fifteen cases in which complete anæsthesia was induced, in eleven the uterine contractions were stopped, or enfeebled, and the labour consequently retarded. Out of twelve cases in which a minor degree of narcotism was induced, in eight the uterine contractions were retarded. The chloroform appears to have been given very cautiously; its administration was, in most cases, withheld until the membranes were ruptured, the os uteri fully expanded, and the head pressing on the perineum; in short, until the delivery was on the point of completion. Whenever inhalation is practised early in labour—that is, before the expulsive stage is advanced—uterine contraction is always im-

paired, and labour retarded. If the inhalation be deferred to a later period, the arrest of contraction in the womb is not so constant. So great is the accumulated excitability of the spinal marrow at the epoch of parturition—so intense is the excitation of the esodic nerves, distributed in profusion about the orifice of the vagina, by the contact of the foetal head, that a moderate inhalation is quite ineffectual in subduing the vehement activity of the diastaltic function.* The diminution of the uterine contractions under chloroform shows conclusively that chloroform exercises a depressing effect, analogous to that of shock, on the spinal centre. It also proves, beyond a doubt, that chloroform exerts a poisonous action upon the spinal and ganglionic system at the same time as it does upon the brain."

2. LACERATION OF THE PERINEUM. This occurred in four cases; and Dr. Barnes hence considers that chloroform does not prevent this accident. The relaxation produced by chloroform, he says, is probably simply a relaxation of the muscular fibre; whereas the natural relaxation extends to the cellular tissue, and to the skin. He further observes: "The physiologist will also observe in this stage a proof that pain—the psychical perception of pain—has its use. The abolition of pain has its danger. It has been remarked that chloroform inhalation, towards the completion of the expulsive stage, does not always arrest the action of the expiratory muscles. These cannot act efficiently, unless the chest contain a certain quantity of air, shut in by the closure of the glottis. It is by means of the powerful action of the expiratory muscles, added to the contraction of the uterus, that the head is driven through the ostium vaginæ. The danger of laceration of the perineum would, in many cases, be great, had not nature provided a safeguard against excessive and untimely expulsive energy—that safeguard lies in pain. It did not escape the acute philosophic observation of Denman that a cry, uttered at the acme of a bearing-down effect, uncontrollable by the will, by opening the glottis, and permitting the escape of the retained breath, at once broke the force of the expulsive nismus, reduced the pressure on the perineum and uterus, and saved both from rupture. Emotional influence is annulled when anæsthesia is induced; when the sensation of pain is removed, the system takes no alarm at impending danger; the glottis remains closed; the expiratory muscles continue to act with all the blind violence of the diastaltic function; the order of parturition is subverted; an essential link in the chain of the phenomena of labour is wanting; the head is driven with irresistible fury upon the perineum, before the process of dilatation is complete. It is not surprising that laceration is the result. It is fortunate that, at this stage of labour, the perineum more readily gives way than the uterus."

Dr. Barnes certainly has not proved that the chloroform is chargeable with the laceration of the perineum in the four cases in the table. The women were all primiparæ; one was 37 years of age, and another 35; patients, therefore, particularly liable to the accident.

3. CONVULSIONS. These followed delivery, in one case, in two hours, and the patient died in nineteen hours. No doubt the patient was predisposed by her previous epileptic attacks. In another case (2), quivering of the lips and shivering occurred during the anæsthetic state, and shivering fits were renewed after delivery. In case 17, also, strong shivering followed delivery. Ether and chloroform have been found the most effectual means of exciting a fit in epileptic patients; and Dr. Barnes thus sums up his remarks on the probability of chloroform inducing puerperal convulsions in an epileptic woman—

"Labour is the exciting cause of convulsions in epileptics.

"Chloroform is a certain exciting cause of a fit in epileptics.

"Combine these two conditions; give chloroform to an epileptic patient in labour. What will be her chance of success?"

* DR. TYLER SMITH thinks it proved that, "under the influence of chloroform, stimulation of the spinal marrow is produced in the first instance. In some cases, when the anæsthetic is used in great moderation, its effects, however long continued, may, perhaps, be slightly stimulant."—*London Journal of Medicine*, December 1849, p. 1111.

These remarks of Dr. Barnes are excellent, so far as they point out the danger of administering chloroform to epileptic women; but the argument must be confirmed to this class of cases.

4. METRITIS AND DYSENTERY. Dr. Sachs refers to metritis as one of the diseases following the use of ether; and M. P. Dubois, having observed two cases of puerperal fever in which chloroform had been employed, concluded that they must stand in the relation of cause and effect. Dr. Barnes does not seem to lay much stress on this point.

5. BY ADMINISTERING CHLOROFORM, DO WE OBTAIN FOR THE PATIENT ESCAPE FROM PAIN AND FROM THE CONSEQUENT SHOCK TO THE SYSTEM? We have here to consider the following questions:

- a. Is the pain of labour physiological or pathological—that is, is it injurious or beneficial in its action?
- b. Is the abolition of the sensation of pain in the parturient woman unattended by danger?
- c. Is it true that the anæsthetic agents in use really annihilate pain, and save the system from the consequent shock?

(a) Dr. Barnes refers to a lecture published in the *Medical Gazette*, Oct. 1849, for some of the considerations which tend to prove that the pain of labour is physiological, and subservient to a useful end.

(b) Dr. Barnes answers this question in the affirmative. He believes that, in addition to other dangers, there is a shock, oftentimes a deadly one, from chloroform, as well as from pain. In Dr. Sachs' cases, at the commencement of inhalation, the pulse was frequently raised 20 or 30 beats in the minute, and the respirations were increased to 40, 50, or 60 in the minute; the after effect being to lower the pulse and respiration below the natural standard. This seems to Dr. Barnes still more dangerous, as it indicates a depressing action on the spinal and ganglionic systems. He thinks it moreover proved that the sudden impulse of blood, and that containing a poison, may produce a shock to the nervous centres; and he refers to the occurrence of apoplexy, puerperal convulsions, fatal syncope, and puerperal mania.

(c) In reply to the third query, Dr. Barnes observes, "What mean those groans, that agitation, those suppressed mutterings or open cries, which all have observed in patients undergoing surgical operations in the depth of so-called anæsthetic stupor? Are they the expression of suffering, or are they not? Can it be maintained that because patients on awaking express no recollection of that suffering, there was therefore no painful impression conveyed to the sensorium? In the case of parturition, the unconscious mother is as ignorant of her delivery as of its painful accompaniments. It might as reasonably be urged on that account that the child itself had not been born. Should we be justified in flogging a drunken man, acting on the anæsthetic principle that since he might not *feel* the infliction at the time, or *remember* it afterwards, he could not be hurt? Is there no constitutional injury in this case independent of consciousness? The law of the sequence of shock on the nervous centres upon excitation of the peripheral nerves is as inevitable as the sequence of effect upon cause. It has been erroneously concluded that chloroform simply narcotizes the brain, or rather induces a deep sleep, during which state there is complete unconsciousness of pain, and a consequent avoidance of the shock which pain produces on the system. It is further assumed that chloroformization, carried to the extent which is necessary to subdue pain, does not affect the spinal marrow or the sympathetic system. A strict analysis of the nervous system, added by experiment and observation, will show the fallacy of these conclusions.

"In parturition as in surgery, in physiology as in pathology, the physical shock of nervous excitation of injury cannot be escaped from. In parturition as in surgery, the emotional shock of nervous excitation, or injury, may be avoided? In surgery, this may be an invaluable boon? Is it so in parturition? It is more than doubtful. The emotional influences, both those excited by the sensation of pain and those independent of pain, are of immense importance in this complicated function. The voluntary power, too, is often of the highest utility. In woman, at least, the brain should be allowed to retain its integrity,

to exert its beneficial controlling influence over her own conduct, as well as its salutary aid in attaining a safe delivery.

"There is nothing better established in physiology than the strict dependence of all the functions of the economy on the nervous system. Further than this, the nervous system itself is dependent for its healthy powers upon the mutual action and reaction of its component parts. The experiments of Dr. Marshall Hall demonstrate the analysis of the nervous system into three elements; the brain, the spinal system, the ganglionic system: they show, indeed, that each executes distinct functions. But they execute them only long enough to prove the physiological law. No one of the nervous centres can long continue to act or to live separately from the rest. The diastaltic power of the spinal marrow is soon exhausted, if the brain be removed. The peristaltic power is soon expended, if the viscera be cut off from their connection with the spinal marrow. Inversely, the brain also soon ceases to act if severed from the spinal and ganglionic systems. Parturition is normally effected by the combined or successive agency of *all* the nervous centres. Peristaltic, diastaltic, and voluntary motion, all contribute to the expulsion of the child, and the subsequent safety of the mother. Not one of those forces can be properly manifested in due proportion as to power, time, or succession, without the integrity of the others.

"I am not aware that the most distinguished advocate for anæsthetic midwifery has modified his opinion, or his doctrine, as to the extent to which chloroformization should be carried in labour. The extent which he describes corresponds with the fourth degree of Dr. Snow: in this degree, narcotization is complete. Anæsthesia, therefore, as recommended by Dr. Simpson, is an unmistakable reality. There can be no hesitation in concluding that, were the practice generally carried out to that extent, numerous deplorable and fatal accidents must occur. But a simple explanation lies in this fact; viz., that chloroform is very rarely given to the extent necessary to produce its characteristic effects; in other words, that *anæsthetic midwifery is no longer a reality.*"

In concluding, Dr. Barnes makes the following remarks: "In the facts this paper contains, I have offered a complete vindication of what has been called the *à priori*—i. e., the physiological—argument against anæsthesia in parturition. *A priori* and *à posteriori* reasoning have, at length, though travelling by different roads, met at the same point. But the *à posteriori* conviction has been obtained at a fearful cost. Dr. Sachs refers to fifteen cases of natural labour, in which anæsthesia was induced by ether. Arrest of the pains was the common effect. In one case, it became necessary to use the forceps in consequence. Metritis and death followed the anæsthetic and instrumental interference. In one case, convulsions ensued. Out of the twenty-seven chloroform cases, in eighteen, more or less diminution of the uterine contraction was induced; in four, there was laceration of the perineum; in one case, metritis followed; in twelve, there were uttered groans, and other manifestations of suffering, although the patients did not remember it on recovery: in one case, puerperal convulsions occurred, and death ensued in nineteen hours; in two others, there was ominous threatening of the same appalling catastrophe."—*London Journ. Med.*, Nov. 1850.

52. *Displacement of the Ovary.* By EDWARD RIGBY, M. D.—During the last three years, I have had occasion to notice several instances of a painful affection of the pelvic region, which I had not observed before, and which, as far as I know, has not yet been described. It is characterized by intense and peculiarly sickening pain about the sacral region, extending to one or other of the groins, and coming on in paroxysms of such agonizing severity as to render the patient perfectly frantic with the intolerable suffering. In some patients, the intermissions of ease were nearly or quite entire; in others, the pain, although divested of its characteristic intensity, never wholly abated. The source of the pain was evidently connected, directly or indirectly, with the rectum, for the passage of fæces was frequently attended with some difficulty, and always with great suffering.

According to the patient's feelings, it seemed as if a partial obstruction existed somewhere up the rectum, the smallest pressure upon which, by the pas-

sage of the fæces, was sufficient to bring on a paroxysm of this much-dreaded pain. At other times, she could scarcely tell what had been the exciting cause of the attack; for, like a fit of tic douloureux, it would frequently come on from no assignable reason, and cause her the severest sufferings for some hours. Patients describe the pain as being quite peculiar, and of a sickening and utterly intolerable character, such as they had never before experienced; indeed, from the descriptions which one or two have given of it, I should presume that it closely resembles the intense and peculiar suffering which patients describe in cases of orchitis. The pain was usually attended with great throbbing, and with a painful sense of forcing, or distension of the tender part, amounting almost to bursting, like something strangulated.

The menstrual periods have always been attended with intense pain, particularly during the early part of the discharge, though this varied a good deal in different patients, and (as far as I have seen) the discharge was invariably attended with exudations and small coagula. At these times, the whole lower part of the abdomen was frequently tender to the touch, and more or less fever was generally present, probably arising in part from the degree of suffering which had been induced. The tongue always showed the dry short-napped fur which is so constantly seen in cases of disease, or displacement of the pelvic viscera; the digestive organs were much deranged, and not unusually the stomach was extremely irritable.

On making a vaginal examination, she would frequently wince, and complain as soon as the finger touched the os and cervix uteri; but a little care quickly sufficed to show that these parts were not morbidly tender, but that pain was produced by pressing them against the tender spot which was behind and to one side, in the direction of one or other of the sacro-iliac synchondroses, or sacro-ischiatic notches. On passing the finger, therefore, behind and to one side of the cervix, and pressing against the wall of the vagina in the above-mentioned direction, the painful spot is at once reached, and sometimes a slight degree of hardness is perceived.

On examining per rectum, the finger soon reaches the same acutely painful spot which had been felt per vaginam. The patient dreads the slightest touch of it, however carefully applied. It is evidently a convex body, like an enlarged gland, though usually softer, situated in the recto-vaginal pouch: it is movable, if the patient can bear a sufficient amount of pressure for that purpose, and usually one or more vessels are felt throbbing when the finger presses upon it. The ovary is generally larger than natural, being more or less swollen from the strangulation produced by its displacement; and when the swelling is considerable, not only will pain be produced by pressing in the groin of the same side, but the ovary will be distinctly moved upon the finger per rectum. From the fact of its mobility can be explained the circumstance of our being able to feel it sometimes lower in the pelvis than at others, and why the patient is in greater suffering when it is so than when felt higher up. Hence the passage of a solid mass of feculent matter is attended with fearful sufferings; the ovary is pushed down by the fæcal mass as it descends through the rectum, until its attachments are put considerably on the stretch; a further amount of swelling is produced by this state of strangulation, and, in this condition, the fæcal mass is at length forced past, to the indescribable agony of the patient, frequently leaving her in severe pain for many hours afterwards.

In other cases, the ovary is nearly or quite fixed, having apparently contracted adhesions to the neighbouring parts.

It is not easy to speak decidedly as to the causes of this displacement, but I have chiefly, or almost solely, observed it among women of a lax, flabby habit, prone to passive menorrhagia, leucorrhœa, and abortion, but most particularly where the uterus has been retroverted. I have long since pointed out that ovarian irritation or inflammation is a frequent result of retroversion in the unimpregnated state, arising probably from the tension to which the broad ligaments are exposed, and consequent engorgement of the ovary.

The diagnosis is not difficult, for the pain is quite peculiar. It is of a forcing, throbbing character, so sickening and utterly intolerable as to be entirely different to any other pelvic pain with which I am acquainted. Its seat is referred

to the upper and posterior part of the vagina, usually somewhat to the left side where the ovary can be felt, especially upon examination per rectum.

The direction in which we can best reach the painful spot will guide us as to applying leeches per rectum or vaginam; they pretty certainly produce much relief, although, so long as the displacement continues, it cannot be more than temporary. The grand object necessarily must be to restore the ovary to its natural position, and this, whether connected or not with retroversion, will be best obtained by the prone position. The patient soon learns by experience what amount of lying forwards will be required, but, as in cases of retroversion, it is generally found necessary to assume an extra degree of prone position for a few minutes (knees and elbows) previous to lying down upon the prone couch.—*Medical Times*, July 6.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

53. *Child born in the beginning of the sixth month, and reared.*—Dr. W. T. T. BARKER, of Dumfries, relates (*Medical Times*, Sept. 7th, 1850) the following remarkable case:—

“Mrs. A., aged thirty, weaned her first child on the 17th of November, 1846, a fortnight after which (1st December) she menstruated naturally. Two days after the catamenia disappeared (7th December), she conceived, having the same sensations *post coitu* which she felt at her previous conception. At four months she quickened. She was delivered (by a midwife) of her second child, a female, on the 14th of May, 1847—on the hundred and fifty-eighth day of gestation. The child had only rudimentary nails, and almost no hair, except a little, of a slightly reddish colour, at the lower part of the back of the head. It weighed one pound, and measured eleven inches. It was merely wrapped up at first, laid in a box about a foot long, used by the father (who is a slater) for carrying nails, and set on the kitchen fender, before the fire, to keep it warm. It came on very well, and was subsequently treated very much the same as other children, except, perhaps, that it was a little more looked after than usual, being considered a curiosity. She is still of small make, but is quite healthy, and takes her food well.

“I have now attended the family for four years and a half, and have watched her since her birth, but my professional services have never been called for on her account.”

54. *Death from Chloroform.*—Dr. ASCHENDORF states that a child, one year old, had been operated upon for a *nævus* under the influence of chloroform, with apparent success, when, on the child being removed from the table, its head fell back, and it instantly died in a state of convulsion. The quantity used had been six drops in the first instance, and a second application of three drops in some tow placed in a cup.—*Lond. Med. Gaz.*, Nov. 1850, from *Casper's Wochenschrift*, Sept. 6th, 1850.

55. *Poisoning with Dulcamara.* By Dr. PLAETSCHKE.—A man forty years of age, who was using decoction of dulcamara-stalks for a cough, took, one forenoon, from three to four quarts prepared from a peck of the stalks. In the evening he was suddenly seized with numbness in his limbs, and pains in the knees and elbows, dryness of the throat, and paralysis of the tongue. These symptoms increased so much in the course of three or four hours that he could scarcely move either his limbs or tongue. The head remained unaffected, consciousness unimpaired, the pulse quiet, but small and rather hard, breathing regular, the skin cool; there was neither nausea nor vomiting. From the time which had elapsed since taking the decoction, the administration of emetics was contra-indicated; recourse was, therefore, had to stimulants. Camphor was given freely, and the symptoms gradually disappeared.—*London Med. Gaz.*, 27th Sept. 1850, from *Casper's Wochenschrift*.

MISCELLANEOUS.

56. *On the Use of Lead in the Manufacture of Sugar.*—Dr. REDWOOD communicated to the Pharmaceutical Society (Oct. 9th, 1850), the result of some experiments he had made with the view of ascertaining the action of certain chemical agents upon sulphate of lead. In the discussion which has recently taken place with reference to the proposed process for purifying sugar by the use of subacetate of lead and the subsequent separation of any excess of lead by sulphurous acid, the advocates for the adoption of this process have contended that, should any portion of lead remain in the sugar—which the chemists appointed by the government to investigate the subject have proved to be the case—yet this, being in the state of sulphite, will be perfectly harmless. This opinion, which is principally founded upon the fact of sulphite of lead being a very insoluble salt, is opposed to that expressed by the medical men, Drs. Pereira, Taylor, and Carpenter, who were consulted by the Government. The object of Mr. Redwood's experiments was, to determine how far sulphite of lead was entitled to the appellation of a stable and insoluble compound when exposed to the action of chemical agents which it would be likely to encounter in the stomach. Sulphite of lead was found to be insoluble in water and in acetic acid. On digesting it in water containing free hydrochloric acid, however, a considerable quantity of the lead was taken into solution, so that the liquid gave a copious precipitate on the addition of hydrosulphuret of ammonia or carbonate of soda. A similar effect was also produced on digesting the sulphite in solution of sal ammoniac, and, to a slight extent, on digesting it in water acidulated with lactic acid, and in solution of common salt. It was also found that, on digesting sulphate of lead in solution of carbonate of soda, a mutual decomposition was effected, and carbonate of lead formed, so that, on treating the insoluble residue with acetic acid, abundance of lead was obtained in solution.

Dr. Ure stated that he had had much experience in the manufacture of sugar, and he felt satisfied that the proposed process for purifying sugar with lead could not be practically applied without endangering the public health, especially since it had been shown that sulphite of lead is not the stable and insoluble compound that it had been represented to be.

Dr. Golding Bird thought it was a great error to assume that insoluble substances were necessarily inert. Even admitting the insolubility of sulphite of lead, therefore, he should have required strong evidence to prove that it could safely be administered, even in minute doses, in an article of food of daily consumption. He thought too much caution could not be adopted in guarding against the ill effects which might ensue from the adoption of the process alluded to.—*Med. Times*, Oct. 12th, 1850.

57. *Statistics of Poisoning.*—A return has been printed by order of the House of Commons, of the number of persons, male and female, tried in the United Kingdom for murder, and attempts to murder, by the administration of poison, from the year 1839 to the year 1849, both inclusive. The number of persons so tried in England and Wales, during the ten years, was 154—namely, 69 males and 85 females; the number of convictions on either charge was 66. In Scotland the trials for murder by poison, since 1839, have been only 9—2 males and 7 females; the convictions were 3. The trials for attempts to murder were 6—3 males and 3 females. Total trials in Scotland, 15; total convictions 7. In Ireland the trials amounted to 56—25 males and 31 females; and the convictions were 13. In 1839 there occurred only one conviction in Ireland for murder by poisoning; in 1841 there were 5 convictions found against 10 persons accused. In 1849 the number of indictments was 13—7 males and 6 females; and the convictions 3.—*Monthly Journ. Med. Sci.*, Dec., 1850.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Relation of the Dumb-Bell Crystals to Uric Acid and Oxalate of Lime.—
By CHARLES FRICK, M. D., of Baltimore. (In a letter to the Editor.)

My attention has been lately drawn to an article by Dr. Golding Bird entitled "Observations on the Nature and Chemical characters of the Dumb-Bell Crystals described as Oxalate of Lime," in the *London Medical Gazette* for October, 1850. In this article, Dr. Bird proves that a deposit of these crystals underwent the same changes by the action of chemical agents as the octohedral crystals of oxalate of lime, and at the end of his article he refers to a paper of mine, published in a former number of your Journal, and wonders that "so careful an observer as Dr. Frick could have committed such an error" as to suppose these dumb-bell crystals to be uric acid.

Dr. Bird has misunderstood my meaning if he thinks I meant to assert that all dumb-bell crystals are composed of uric acid. My opportunities for observing these crystalline bodies have been too infrequent for me to make so sweeping an assertion; and had I thought so, I should rather have supposed that my limited observations had allowed me to come to an erroneous conclusion, than that so able and accurate a microscopist as Dr. Bird had been mistaken in his views of the nature of these crystals. I do not at all deny that oxalate of lime may occasionally present itself in this form, but I am very sure that all the dumb-bells found in urinary deposits are not oxalate of lime.

I had supposed that the changes I detailed in a paper published in your Journal some months since would have proved this conclusively, but as Dr. Bird denies the fact so strenuously, I deem it due to myself to add one or two other facts that have fallen under my notice, and must ask the favour of their insertion in your Journal.

I have in my possession about two drachms of pure colourless uric acid, upon which I have been in the habit of experimenting. This, moistened with a few drops of distilled water, and examined under the microscope, always presents one or more distinct dumb-bells, mixed with lozenge-shaped and amorphous crystals of uric acid. If another portion is dissolved in liquor potassæ, and different quantities of muriatic acid added to separate parts of the solution, almost all the different shapes of uric acid may be recognized, and among them, always a few perfectly-formed dumb-bells, surrounded by others whose shape is amorphous. These facts would be sufficiently conclusive, provided the substance acted upon was uric acid, and contained no lime. This is proved as follows:—

1st. On subjecting a small portion to the blowpipe or a piece of platinum foil, it blackens and then entirely disappears.

2dly. On adding a small quantity of liquor potassæ it is dissolved, making a clear solution.

3dly. On dissolving it in nitric acid, and then heating it over the fumes of ammonia, the purple colour indicative of murexid is produced.

These tests prove undoubtedly that the specimen acted upon contained uric acid, and that no lime was present, so that these dumb-bells at least are neither oxalate nor oxalurate of lime.

Dr. Bird, in the article just mentioned, also states that Dr. Hassall has informed him that he has met the dumb-bell crystals in the residue left by the spontaneous evaporation of a drop of urine on a plate of glass, but they were perfectly soluble in water. These of course were not oxalate of lime, but neither were they uric acid.

Dr. Carson, of Philadelphia, an exceedingly accurate and careful observer, tells me that during the last summer he observed a dumb-bell deposit, which was removed by acetic acid, and which he considered was composed of the triple phosphate. This again could scarcely have been oxalate of lime.

As a negative argument, I might advance that I have on several occasions, after adding together oxalic acid and lime in solution, produced the deposition of the crystals of oxalate of lime by the gradual addition of the vapour of ammonia, and although I have constantly found octohedra and all the different varieties of ovals which I have figured in my little work on "*Renal Affections*," under the head of oxalate of lime, I have never been able to observe any dumb-bells.

Without at all denying Dr. Bird's view, that these crystals are occasionally oxaluret of lime (although I have never been able to produce them by adding lime to a solution of oxalurate of ammonia), I yet think they are more frequently composed of oxalamic acid alone, and it is very probable that this acid is not formed by the union of oxalic acid and urea, as Dr. Bird supposes, but is produced by the action of ammonia liberated during decomposition upon uric acid. If uric acid is dissolved in nitric acid, alloxan is first formed, then parabanic acid, and if this latter is saturated with ammonia, oxalamic acid is produced. To these changes, the following facts bear a very decided relation.

We occasionally detect these dumb-bells in urine that is left standing for some weeks, which has undergone decomposition, and which did not at first contain either oxalic acid or oxalate of lime. And they are much more readily produced when the uric acid is deposited by a drop of nitric acid, and then suffered to remain long enough to liberate ammonia by the decomposition of urea.

I am aware that this latter speculation is not supported by a sufficient number of carefully observed facts, and regret that the time for the publication of your Journal is so near at hand, as to prevent me from going more into detail, but I hope at some future time to be able to state some facts which will bear more directly upon the subject under consideration.

BALTIMORE, December 23, 1850.

Iritis complicated with Amaurosis. By GEORGE W. PATTERSON, M. D., Resident Physician of the Northern Dispensary of Philadelphia.

Mrs. W. called at the dispensary in reference to an affection of her eye; she was about 40 years of age, of a cachectic habit, and a seamstress by occupation. Upon examining her eye, I found a diffused redness of the sclerotica; the cornea was surrounded with a vascular zone; the pupil was much contracted and scarcely dilatable; the iris had lost its usual fibrous appearance, was irregular at its inner margin, and its colour was of a reddish hue; she was unable to distinguish objects, and what was somewhat remarkable, there was no photophobia; light that could not well be borne by the sound eye could be readily endured by the affected one. She attributed the inflammation to ex-

posure to cold and to sewing until late at night. Such was her condition, and to the affection of this organ alone did she direct my attention.

Her pulse being feeble, considering the amount of inflammation that existed, I did not resort to venesection, but had leeches freely applied to the vicinity of the eye; gave calomel, grs. iv, and followed it with a saline cathartic, and also ordered mucilage of pith of sassafras as a local application. At the next visit, I found the inflammation somewhat subdued, the pulse being small, though not frequent and having but little force; noticed several fan-like projections of lymph from the free margin of the iris—and she also complained of some circumorbital pain—prescribed R. Mass. pil. hydrarg. gr. xviii; pulv. ipecac. grs. vi; m. and ft. pil. vi; and directed one to be taken three times daily.

Ordered a blister to be applied to the nucha, and the blistered surface to be dressed with mercurial ointment, and also ext. belladonna made thin by water to be applied around the eye.

The belladonna acted, although the pupil was not dilated by it as much as was desirable—continued the application. Discovering slight fetor of the breath, I determined to discontinue the use of mercury and substitute the iodide of potassium; I did so because of her peculiar diathesis, wishing to avoid salivation, and also from a belief that the inflammation was of a rheumatic character, and it was while under this agent, the iodide of potassium in five-grain doses three times daily, that the effusion disappeared; the pupil resumed its even margin and the redness passed away, yet notwithstanding this improvement, the patient could not see, although prior to the commencement of the iritis her vision was unaffected. Being quite anemic and debilitated, I now prescribed Vallet's ferruginous mass thirty grs. daily in divided doses, with the view to correct the general adynamic condition of her system, and thus induce the optic nerve to resume its function. After she had taken the preparation of iron for a week, I had the satisfaction to find that sight was returning, which was completely restored after she had taken about $\frac{3}{4}$ of the medicine.

The patient at this period informed me that she had been and was still suffering much from leucorrhœa, and that the discharge was not only profuse and watery but of an acrid and offensive character. Believing this drain to have been the secret cause of much of the difficulty with which I had had to contend, I at once resorted to the following formula, to be used as an injection. R. Arg. nitrat. $\frac{3}{4}$ i; creosot. gtt. xx; aqua, f $\frac{3}{4}$ vi.—M. The discharge from the vagina soon became albuminoid in its character, and gradually disappeared. Having thus corrected these complications, she was discharged.

Abnormal Relation with Inversion of the Clitoris and Urethra. By WILLIAM D. KELLEY, M. D., Gallatin, Tenn.

Mrs. — having been guilty of illicit intercourse, was soon after attacked with gonorrhœa, in the treatment of which the following anatomical relation was discovered: on separating the labia majora, the nymphæ were seen to be but slightly developed, a ruga or fold of mucous membrane affording the only evidence of their existence. Immediately *beneath* the commissure of the vulva was the smooth triangular space of the VESTIBULUM, with the meatus urinarius situated two lines above its inferior margin, and three-eighths of an inch *above* the projecting glans clitoridis; which dipped into the superior angle of the vagina. The patient being placed upon her back and a catheter introduced, instead of pursuing an upward and backward direction, it passed vertically for an inch, when a slight incurvation led directly into the bladder,

a jet of urine following. It is thus shown that the urethra penetrated the space between the corpora of the clitoris and the arch of the pubis, and made its exit above the clitoris; both the vestibulum and meatus urinarius appearing in front and above the latter organ. The clitoris was reverted so as to completely conceal the anterior edge of the upper wall of the vagina, and its glans was grooved antero-posteriorly by a deep sulcus. Mrs. — is a woman 45 years of age, is the mother of several children now grown to man and womanhood, and of virtuous habits previous to her recent guilty commerce.

DOMESTIC SUMMARY.

Case of Poisoning by Bromine.—Dr. SAYRE has made to the New York Pathological Society the following report on a specimen of poisoning by bromine recently presented to the society.

"A. H., aged twenty-four, of good health and temperate habits, a daguerreotypist by profession, residing in Williamsburgh, near the city of New York, at half-past 6 A. M., on the 29th of May, 1850, swallowed one ounce, by weight, of bromine, for purpose of self-destruction. The immediate symptoms, as reported by his medical attendants, were, of spasmodic action of the muscles of the pharynx and larynx, and great difficulty of respiration. This was soon followed by intense burning heat in the stomach, with great anxiety, restlessness, and trembling of the hands. The pulse was rapid, tense, and corded, and the respiration greatly hurried. The stomach was entirely empty at the time of taking the bromine. Previous to the arrival of medical assistance, a quantity of carb. ammonia was exhibited. An unsuccessful effort was made to use the stomach pump; an emetic of sulph. zinc, and afterwards carb. magnesia, in solution, with albumen, was given, which produced vomiting only when the stomach was distended. At other times there was no nausea or vomiting. The symptoms above described increased in intensity; the hands and feet became cold, with failure of the pulse, &c., until 2 P. M., when he died, seven and a half hours after having taken the poison.

"*Post-mortem, seventeen hours after death.*—On opening the abdomen, the external and anterior surface of the stomach was vividly injected; the lesser curvature to a great degree. Near its middle was a softened ecchymosed spot, an inch and a half in diameter; posteriorly were several smaller and similar spots, surrounded by red borders. The external surface of the duodenum was also vividly injected; the mesentery minutely injected, and a portion of it nearest the stomach was stained of a deep yellow colour, as were also other parts lying immediately beneath the stomach. The spleen and liver were of normal appearance. The pancreas much injected and deeply stained. The stomach contained about four ounces of thick fluid, resembling port wine dregs, and exhaling faintly the odour of bromine. Its whole internal surface was covered with a thick layer of black deposit, resembling coarse tanned leather, with intense submucous injection. There were about four ounces of fluid in the pericardium. The lungs were gorged with blood.

"*Remarks.*—On examination before the society, the internal surface of the stomach was of a nearly uniformly dark colour, and presented an appearance as if a mixture of charcoal and gum-Arabic had been spread over its mucous surface, and then allowed to dry and crack open in very numerous places. On gently rubbing or scraping off this black substance, the epithelial lining was found to be completely destroyed, leaving only a very thin portion of the mucous membrane. The colour gradually diminished towards the duodenum, and in this intestine was ash-coloured, or light gray. There was very considerable submucous injection of the stomach, and in some spots extravasation. The same appearance, though of less extent, was observed under the peritoneal coat.

"When we consider the physical and chemical properties of bromine, its nau-

seous and suffocating odour, its irritating effect upon the nostrils and organs of respiration and deglutition, and its corrosive quality, it is surprising that such a substance should ever have been selected for the purpose of suicide; but still more so that the patient should ever have succeeded in swallowing it. It is probably the only case on record of fatal poisoning by bromine, occurring in the human subject."—*New York Journ. Med.*, Nov. 1850.

History of the Epidemic Dengue, as it prevailed in Charleston in the summer of 1850. The *Charleston Medical Journal* for Nov. last contains a history of the Epidemic Dengue as it prevailed in Charleston in the summer of 1850, by S. H. Dickson, M. D., which, like everything from the pen of its distinguished author, is highly interesting and drawn up with ability.

The summer, he states, had been unprecedentedly hot and dry; the thermometer ranging between 80° and 90° for forty days successively; with no rain since the middle of May. Hooping-cough and scarlatina had spread extensively, the latter assuming considerable severity, occasioning in the months of May, June and July, 1 in 14 of the whole number of deaths during that period. Yet on the whole the city was healthy.

In the last week of July, cases occurred which looked like scarlatina, yet presented obvious differences, and these differences became more and more distinctly marked, until the resemblance was lost. Fever, assailing with great violence, ran a brief course, inflicting intense suffering, and disappeared, in many instances, without any cutaneous eruption, leaving the patient feeble and prostrate.

He gives the following description of the disease:—

"The access of the disease might be slow or sudden. If the former, there was a stage of lassitude, sensitiveness to a current of air, with dryness of skin. A formed chill rarely preceded. Most persons had a dull headache, with some intolerance of light. In general, anorexia was present, though some retained more or less appetite throughout. The tongue was clean and red. Pain gradually diffused itself over the limbs and back; many became drowsy, with red eyes; the pulse usually a little increased in frequency, in some, remained unaltered; and thus two, three, four, or five days would pass off, with great complaint of languor, debility and discomfort. On the fifth, sixth, or seventh day, the tongue would become furred, with slight nausea, and an eruption show itself on the surface, with more or less itching. This would vary in distinctness many times in the twenty-four hours, and gradually disappear, leaving the patient to convalesce slowly.

"Such was the history of a large number of cases, but, in a majority, the attack was sudden and violent. The patient was seized with severe headache, intolerance of light, and universal distress and oppressive debility. The skin was hot and dry; the face flushed, the eyes red and watery; the pulse tense, quick and frequent. The patient was exceedingly restless, and soon complained of intense pains in back and limbs and large joints. In some, the stomach and bowels were the seat of violent pain. The febrile paroxysm was of very various duration; and the local determinations might also vary, except as to the head, which, as far as I have seen or heard, was universally affected. In some, there was delirium throughout the febrile part of the attack. I noted carefully, in several, the length of the first or febrile stage. In one, it was only six hours before the skin became moist and the pulse abated in frequency. In nine hours, the remission was well established; but a degree of circulatory excitement prevailed for nearly twenty-four hours, when it left the patient and did not return. The pains in the head, back and limbs continued, with little abatement, however, for about forty-eight hours, when they gradually subsided. The patient was up on the sixth day; but, in this case, there was no eruption. In no other case did I see a paroxysm of less than twelve hours. The average, I think, was about thirty-six. In a few instances, it lasted for two and three, and seldom for four days. I saw no remission nor intermissions, but heard of many cases, both remittent and intermittent. There was, in the fully-formed attack, two very definite stages, with an interval clear of fever. This interval, of two to four days, was sometimes so free from suffering that patients would

rise from bed and lounge about the house, complaining only of debility, or even, if resolute, resume their ordinary habits and occupations. But on the fourth or fifth they would again yield to oppressive malaise and weakness, and seek the recumbent posture. A return of pain in the head and limbs, if it had disappeared; often a recurrence of febrile excitement would mark the access of this second stage. The tongue, which, until now had been clean and red, would put on a thick yellowish fur; the stomach would be more or less nauseated—very seldom to the extent of retching or vomiting; and this state of things would remain until, on the fifth, sixth, or seventh, some cutaneous eruption would exhibit itself, usually with a sense of heat and itching.

“The course of this disease occupied about eight days—not varying greatly from this standard. The differences seemed to be most marked in the extension or contraction of the interval between the two stadia.

“With the subsidence of the eruption, all ailment usually disappeared, but slowly and gradually. Almost all complained of a most annoying degree of muscular weakness. A very large proportion were alarmed by the occurrence of syncope on their first attempting to resume the upright attitude and exert the muscles of locomotion; and some few were troubled with stiffness of the back and extremities.

“The time of access of the febrile paroxysm, in a majority of those whom I could observe closely, was about ten in the morning—the hour of access of tertian. The subsidence was marked by profuse sweating, in most.

“In many, the second stage was attended with great pain, especially in the head, but without fever.

“There was a marked difference in the proportion of cases attended with eruption, in the first and latter portion of the epidemic. It became universal, or nearly so, in those who were attacked in the last week of August and in September.

“There was a marked difference, too, in the proportion of blacks presenting the eruption. I bent an especial attention to this point, knowing how easy it is to overlook that symptom in the coloured patient. I directed them to observe for themselves; to report any roughness, heat, or elevation, or itching. Three out of five escaped. It was also more common for them to recover without the supervention of a second stage. This, when it did happen, was denoted, in several, by disorder of the stomach and bowels, cholice, diarrhoea.

“In children, convulsions occasionally ushered in the attack. I saw one affected, through the three days of the first stage, with vacillating delirium, resembling closely the condition of delirium tremens—fearful and anxious to avoid some evil. In these subjects, also, the stomach was apt to be disturbed, with vomiting, sometimes, of viscid bile. In some, there was painful diarrhoea, from the first.

“No epidemic of which I have ever read was so universal in its prevalence as this. Numerous large households were attacked, without a single exception. Of my family, eleven in number, I alone escaped. In my kitchen, fourteen out of seventeen were assailed. All but two of the ten whites had an eruption. In five of the blacks, I am sure there was not the least appearance of this kind; in but two was it marked enough to make one certain of its presence.

“In any given domicile, the attacks were apt to be simultaneous, or in rapid succession; so that it often happened that there was in a family no one well to attend the sick.

“The latent period was various, but, in certain instances, prodigiously brief. Dr. Bellinger was satisfied with the proof that two persons, from healthy localities, were attacked within twenty-four hours, on visiting the city. Dr. Cain, whose opportunities at the Marine Hospital were specially definite, saw some cases in which the attack occurred on the day after arrival here. This reminds us of the instances in which typhus infection was immediately efficient, as related by some of our best authorities, Marsh, Thompson, &c. Several examples occurred of attacks within three days; it seldom gave a longer respite than five. When it had much declined in extent and violence, I saw two cases occur on the eighth and tenth days, as late as the middle of September.

"Exposure to the cause of the disease was also effective in a very short time—visitors to the city on business which detained them but a few hours being often assailed soon after their return home.

"The prognosis was altogether favourable. It was, indeed, curious, and highly gratifying to know—as a brief acquaintance with this strange disease taught us—that, furious as was its onset, vehement as the complaints of the patient might be, and his condition however full of menace, these fearful symptoms would subside after a time, and certain restoration to health ensue.

"The most alarming phenomena were convulsions—not exclusively confined to children, they occurred in one adult male—delirium—great gastric and intestinal disorder—great failure of pulse on the subsidence of the early febrile paroxysm. I saw, in some, the heart labouring slowly and heavily, as in bad cases of typhus. Some convalesced with marked slowness of pulse—as low as 40—the cutaneous affection assuming the erysipelatous character, or becoming carbuncular. I saw no death; indeed, fatal terminations were very rare. I heard of one, from mere prostration; two from erysipelas; and two from tetanus, spontaneously supervening. These latter seemed inexplicable and accidental.

"The diagnosis of our epidemic presents some difficulty. If we consider the eruption an essential character, we must acknowledge the presence of two forms of fever, coincident and concurrent, deserving, from their frequency, each the title of epidemic; or we shall be driven to regard a large number of the attacks as abortive and incomplete. In the first onset, the two sets of cases presented no appreciable difference; nor was there a single circumstance in their history which could lead to the prediction that eruption would or would not ensue. Nay, as in a large majority, eruption was the last in the train of symptoms, so, in some, it was the very first, and, in others, presented itself within a few hours after the invasion of fever. Some were not thus saved from a second stage, with a second eruption. This I saw, most distinctly, in a case in my own house.

"As to the eruption itself, it deserves a still more special notice. If the question were to be asked of the whole body of the physicians of our city, I doubt whether any two of them would offer the same definition or description of the cutaneous efflorescence, as characteristic or peculiar, while each of them would describe many varieties as occurring under his notice. I will endeavour to pourtray and class them:

"1st. *The Scarlatinous*.—This aspect of the surface was most common in the earlier existence of the disease; and many suppose, very reasonably, that the first cases were regarded and spoken of as scarlatina, which had been very prevalent through the winter and spring. This smooth, diffused redness of the skin was usually attended, too, with similar redness of the tongue, lips and gums. It was the character apt to be assumed by the premature efflorescence which sometimes intruded itself on the first stage during the three first days.

"2d. *The Rubecolous*.—I denote, by this term, a brownish, circular eruption, little elevated, rough and furfuraceous. This was not met with except in the maturity of the cases, coming out on the sixth, seventh, and even as late as the eighth and ninth days—always attended with fever and gastric disorder.

"3d. *The Erysipelatous*.—Cases of this sort were among the worst and most serious. In an interesting boy of seven years, the son of a medical friend, the skin of the cheek and temple will be permanently scarred from the sloughing of the cellular membrane beneath.

"4th. *The Variolous or Varicellous*.—This was not frequent; but I saw two instances in which a pustular eruption appeared. I am disposed to class, here, a very extraordinary case of fever, which I saw in July, with Drs. Porcher, Bellinger and Moultrie, in which the whole back was covered with pustules, like those of confluent small-pox, a few occurring on the forehead and limbs.

"5th. *The Lichenoid*.—The resemblance to prickly heat was here very obvious, but the little papulæ were fugacious, and would subside and become prominent many times during the period of their stay, which was not prolonged usually beyond twenty-four to thirty-six hours. These attended the milder class of attacks, and showed themselves often while the patient was beginning

to go about. There was no soreness with them, and but little itching or other inconvenience. It was in these and the second form, the Rubeculous, that we met with the desquamation of the cuticle—so frequent an event.

"6th. *The Papulous*.—I saw several of this sort. There was roughness of skin, with hard points, little elevated, seemingly within the skin. These points were discoloured, sometimes brownish, often of a leaden hue. They were coincident with feeble circulation, slight nausea, vertigo.

"7th. *The Phlegmonoid*.—It was ascribed to the heat of the season that boils were so common and troublesome, not only to children, but among adults. Great numbers suffered from these annoying tumours, and carbuncle also was of frequent occurrence. But it was among the patients recovering from fever, or in its second stage, that these affections were most complained of, seeming, in many, to take the place of the more ordinary eruptions.

"8th. *The Miliary*.—*Urticarious*.—Punctuate, resembling nettle-rash very closely. This was frequently seen, perhaps not so often alone as intermingled with some of the others.

"9th. *The Purpurous*.—Purpura was met with several times among this confused variety of eruptive disorders. It was usually of the simple form, but occasionally diffused ecchymosed spots were seen, and sometimes sponginess and bleeding of the gums.

"I saw with Dr. Jervey a case in a negro infant, presenting the exact appearance of lepra vulgaris. It came on and subsided at the same periods of the disease with the other eruptions.

"The child of the last-named gentleman was the youngest subject that I have known attacked. It was less than a week old, when the disease appeared with great redness and heat of skin, fever, etc. Its forehead was covered on the sixth day with circular elevations, firm and transparent, very like sudamina."

Dr. D. considers this as the same disease as the dengue of 1828, which prevailed at the South, and the break-bone fever which prevailed in Philadelphia in 1788, described by Rush.

As regards the treatment, Dr. D. says he has little to record. "All my medical associates came to look upon this strange disease as one so certain to terminate favourably that they were not called upon to interpose any active remedies for suffering so transitory. Some followed the medicine expectante almost absolutely—advising only rest in a recumbent posture, with cold applications to the head and warm pediluvia. Others added sub-acid drinks, I mean enjoined them as somewhat remedial. The patient took them readily, though there was little thirst. Prof. Frost used the lancet, though rarely, as a palliative in the violent headache of the first stage, and, as he tells me, with pleasant effect. Many prescribed, at the onset, a mild cathartic, Epsom salts or a Seidlitz powder, abstaining from farther prescription. Some maintain that a full dose of a mercurial was useful. Leeches, vesicatories, and a great variety of counter-irritant and soothing applications, were made to the seats of pain, with reported benefit. Leaving this matter to the patient, I saw no marked advantage from numerous experiments made with care. The subsidence of the first stage of febrile excitement afforded a good opportunity for the exhibition of quinine to those who believed the disease remittent or intermittent. I advised it to a few—and saw it taken by others—uniformly, as I thought, with annoyance and injury—never with any good result. Opium was employed almost universally—by some exclusively. It did not seem to me indicated so forcibly, as in the arthritic affection of 1828, yet it was often highly serviceable. It was certainly our best palliative. Even in the first stage, when it seemed of equivocal applicability, it gave a quiet sleep followed by a copious diaphoresis. A considerable portion of my patients, however, were drowsy from the commencement, and several spent nearly the whole of the first stadium in spon-taneous sleep. All seemed to derive some solace from moderate doses of tinct. opii camph., in the interval and during the second stadium.

"As in typhoid affections, stimulants were often found eminently useful, and great numbers are ready to affirm that they can ascribe the first sensations of returning comfort to an indulgence of this sort on the part of their physician. One would take wine, another malt liquors, and a third brandy in preference.

Whenever the pulse was inordinately slow, and the heart's action laboured and dull, I administered stimulants freely. So also when the skin was cold, or covered with profuse sweat, or the eruption became purple or livid. The apparent atrophy or remarkable emaciation of many convalescents continued, until they were advised to resort to some stimulant; under the effect of which alimentation would seem to have been promptly resumed, and the food taken become at once more nutritious."

Gangrenopsis.—The following suggestion by Professor DUGAS, of Augusta, Georgia, contained in a letter to the Editor of the *Southern Med. and Surg. Journ.* (Oct. 1850), as to the influence of mercury in favouring the occurrence of gangrenopsis, where a tendency to it exists in the system, is well worthy of consideration.

"In this section of the country," remarks the professor, "the occurrence of gangrenous affections of the cheeks, lips and gums, in children, is by no means uncommon, and there are few communities in which there may not be found some living evidences of its havoc upon the face, as well as of the possibility of occasionally preventing a fatal result. I do not know of any satisfactory explanation of the fact that it affects exclusively those of tender years, and most frequently those between five and eight years of age. The object of this communication is to direct attention to a corresponding susceptibility of children of this age to mercurial salivation and sloughing, and to elicit the inquiry into the probable influence of mercurials in the occasional causation or excitation of such a state of things. Without denying, for a moment, that sloughing phagedena, cancrum oris or gangrenopsis (as the affection is variously denominated) may and does occur in individuals who have never taken mercurials, is it not possible, nay, is it not probable, that the use of an agent which does of itself sometimes induce a very similar destruction of tissues, and which is especially prone to do so at the very period of life most subject to gangrenopsis, may increase the tendency to this disease, if any exist in the system? The affirmative would seem a necessary or at least a rational corollary. Having had my attention very early drawn by a practitioner of genius and fine judgment (my preceptor), and one who was never accused of being afraid of mercurials, to the danger of giving calomel to children during the period of second dentition, I have never forgotten the lesson, and feel strongly disposed to attribute to it the fact, the remarkable fact, that during a practice of twenty years, I have never had a case of gangrenopsis to originate under my treatment! I have, of course, seen cases of it, but they had always originated in the hands of others. I have now vividly in my recollection a family of five children, three of whom had during the same autumn been successively taken with remittent fever and died with most awful sloughing of the cheeks and lips. They were all treated with calomel. Discouraged at the result, the parents determined to change their medical adviser, and I was requested to see the other two children when similarly affected with fever. These were treated without mercurials and recovered, without gangrenopsis. Far be it from me to wish to generalize from isolated cases, or even from the mere results of my own experience. Yet I have deemed it a duty, in a matter of such vital importance, to make the above remarks, with the hope that they may incite others to endeavour to determine how much should be legitimately attributed to an original defect of constitution, and how much to the treatment instituted. It will be observed that in the cases published in your last number, nothing is said of the treatment to which the patients had been subjected prior to their admission into the hospital."

Treatment of Rubecola by Inunction.—Dr. JOHN EVANS, of Chicago, has treated measles successfully by inunction as recommended by Dr. Schneeman in scarlatina, and relates (*North-Western Med. and Surg. Journ.*, Nov. 1850), the following case. June 1, 1850, he was called to a girl fifteen years of age, labouring under the characteristic symptoms of a violent attack of measles—strong febrile action; severe pain in extremities, loins and head; injected and suffused eyes, with intolerance of light; constant distressing nausea, and the eruption well marked upon the face, neck and breast. Eight grains of Dover's powder was

given every six hours, and there being no abatement of the symptoms the next morning, Dr. Evans directed the patient to be rubbed with a piece of fat bacon over the entire surface.

The relief was marked by the subsidence of all the distressing symptoms in a few hours, and the application was repeated twice the next day. No other treatment was applied except the free use of warm teas. The recovery was more rapid than Dr. E. had before seen in such cases, and without any disagreeable sequel.

Two other members of the same family were treated by the inunction with the same favourable results.

Dr. E. has since used the plan of treatment in a number of cases, and with uniform and prompt relief.

Hydrangea Arborescens in Lithiasis.—Dr. E. W. BUTLER recommends a decoction or syrup of the root of the *hydrangea arborescens*, in the dose of a teaspoonful three times a-day, to facilitate the discharge of gravel, and to relieve the pain attendant on the passage of a calculus through the ureter.—*New Jersey Medical Reporter*, Oct. 1850.

Absence of Uterus.—Dr. G. S. CRAWFORD, of Chicago, relates (*North-Western Med. and Surg. Journ.*, Nov. 1850) a case of absence of the uterus. The patient was thirty years of age, had been married fourteen months, and had never had any periodical discharge from vagina, but on one occasion had a slight serous discharge. "Since girlhood she has had a small quantity of a whitish glairy fluid pass from the anus before the evacuation of fecal matter; about once a month the discharge would continue for two or three days, on her going to stool; at these periods she had pains in the loins with general constitutional disturbance, and enlargement of the mammæ."

The vagina terminated in a cul-de-sac; the depth of which did not exceed an inch and a half. The patient has sexual desires and is gratified at the attempt at coition.

Popliteal Aneurism—Ligature of the Femoral Artery, Cure.—Dr. CHARLES A. POPE records (*St. Louis Med. and Surg. Journ.*, July, 1850) a case of popliteal aneurism the size of a large orange, in a robust boatman thirty years of age, in which he applied a ligature to the femoral artery. The ligature came away on the twentieth day, and a complete cure was effected.

Operation for Removal of an Ovarian Tumour, by large Abdominal Section.—Prof. ALDEN MARCH, of Albany, has communicated to the New York State Medical Society an account of a case of ovariectomy, which is published in their Transactions.

The subject of this was a Mrs. P., 49 years of age, the mother of five children, the youngest of whom was seven years old. "The tumour was of three years' growth or more, having been accidentally discovered when it was about the size of a turkey's egg, in crowding between a bed-post and the wall of the room. For a year or two after, it gave her no alarm, or scarcely any anxiety; since it was neither painful nor tender, nor was its moderate increase in size calculated to excite serious apprehensions for the future; so that its existence was not made known to her physician until within eight or nine months of the day of the operation. During the last three or four months, the tumour had increased so rapidly that she appeared like a woman far advanced in pregnancy. At last she was so much incommoded as to be entirely prevented from sleeping in the horizontal position."

The operation was performed Dec. 10th, 1849, in the following manner:—

"An incision was commenced about four inches above the umbilicus, and carried in the line of the linea alba to near the pubis. The abdominal wall at the upper part was extremely thin, and by two or three strokes of the knife the tumour was readily brought into view. The wound was so extensive, being about 12 inches, and the tumour so much exposed, that it was readily discovered by the eye and hands to lie almost loose in the abdomen. To facilitate

its extraction, a puncture was made in the front and lower part of it, by which nearly or all of the water from the cyst was evacuated. The collapsed sac was followed down to its attachment to the right angle of the uterus, by which it was discovered that the ovarium had been dilated into a *monolocular* or single sac, attached to the uterus only by the broad ligament and Fallopian tube, which when twisted upon itself or gathered together was not larger than the little finger; around which, in mass, a three-threaded ligature was very tightly applied, not merely by the strength of a strong man, but by one of my own hands superadded. This was applied very near to the substance of the uterus; and next, all the substance included in the ligature was severed about half an inch from the point of its application. In using the sponge to cleanse out a trifle of blood that had fallen into the abdomen, the ligature was detached, when a brisk or rather an alarming hemorrhage ensued. The uterus was seized upon, drawn up, and the part containing the severed vessel, which was of the size of a crow's quill, or larger, was secured between the thumb and finger of my assistant, Dr. Armsby, until I could pass an armed needle with double ligature, the four ends of which I tied each way. The first did not prove effective in completely arresting the flow of blood. Another needle was passed in the same manner and secured as before, which answered the purpose. The patient must have lost nearly a pint of arterial blood, most of which fell into the cavity of the abdomen, and after having been properly removed, the wound in the abdominal wall was closed by eight interrupted sutures, and the ligatures brought out at the lower part of the wound. The abdomen was supported with long adhesive straps, a large sheet folded for a compress, and over the whole a towel or swathe applied after the manner of its use in obstetrical practice.

"The shock of the operation and the loss of blood being so severe for the patient, it was difficult to keep life in her for several hours. However, at the end of six hours, re-action began to take place. Although she was in the horizontal position during the operation, yet she became faint; which rendered it necessary for an assistant to make pressure with his hands on the bowels, to aid in keeping up the circulation. She also experienced a degree of nausea, which I was then rather disposed to attribute to the use of chloroform. Some four or five days after, there was a disposition to retch, but not sufficient to amount to much vomiting. This I attributed to the sympathetic irritation existing between the uterus and stomach. I believe this was all quieted by a little infusion of columbo.

"In the management of the case, I constantly and regularly used morphine, for some 10 or 12 days, and did not attempt to disturb the bowels with physic for eight or nine days. In the mean time, the bladder became distended with urine, and the bowels with air. The former was relieved by the use of the catheter, and the latter by passing up the rectum a large gum-elastic tube. By the adoption of these measures, the patient obtained great relief, and continued to improve from day to day in a very satisfactory manner.

"I think the sutures were removed on the eighth day, when union by the first intention was complete, at every point, except at the lower angle of the wound occupied by the ligatures, with which the divided arteries were severed. There was no redness, nor scarcely any tenderness in any part of the abdomen, except at the lower part, or in the region of the uterus. The ligatures had all come away, and the patient had so far recovered her health and strength as to be able to make a journey of over a hundred miles in one day, on the thirty-fourth day after the operation.

"The sac, when distended with its fluid, weighed eighteen pounds."

American Medical Association.—It should be remembered that the Association will hold its fourth annual meeting in Charleston on the first Tuesday (6th) of May, 1851. It is desirable that the different organized societies throughout the Union should appoint their delegates at an early period, and that they should take measures that the profession shall be fully represented in our great National Congress.

The names of delegates should be forwarded to Dr. H. W. De Saussure, Charleston, S. C.

Demonstrative Midwifery.—We have received a letter from Professor WHITE, of Buffalo, in which he complains that he has been misrepresented in the notice in our last No. of the trial of Dr. Horatio N. Loomis for libel; and as we are desirous on every occasion to do the fullest justice to all persons, we shall state the points to which he takes exception. These, if we do not misapprehend the Professor, are two.

1st. He finds fault with the remark of the reviewer, "It appears that the professor supposed he had discovered that it was possible by stethoscopic exploration of the abdomen of the pregnant female to determine beforehand the probable presentation of the child at the time of parturition," and that "to verify this discovery he induced Mary Watson, an unmarried female, pregnant the second time, to submit first to this exploration by some, if not all, the members of the graduating class under his direction."

Professor White denies that it can be shown from evidence on the trial that he supposed he had made this discovery, or that this was the object of the clinic. The object designed, he says, was "to demonstrate midwifery, and so stated at the time. For this purpose Mary Watson was induced to be confined at the college. Whilst there awaiting her confinement, the opportunity was embraced of permitting the class to listen to the intra-uterine sounds. On the application of the stethoscope, the foetal heart was heard most plainly in a position which induced me to hazard the prediction that the occiput occupied a posterior position to the right of the spinal column. But the pretence that any discovery was claimed in incidental instructions is entirely gratuitous, and the assertion that it was undertaken on that purpose contradicted by the whole tenor of the testimony."

2d. He complains that he is unjustly accused of having committed a great error in allowing the labour to go on with the head of the child presenting in a faulty position, viz., the occiput to the right posteriorly and face to the left anteriorly.

With regard to the first of these points, we have only to say that the reviewer has honestly expressed the impressions made upon his own mind from a careful perusal of the evidence, and that as he has been misled, others may be equally so, we are therefore happy to have the opportunity of allowing Professor White to place the facts in their true light.

As to the second point, upon consideration of the subject, we cheerfully allow that the language of the reviewer was too strong. We consider the practice advocated by Dr. Denman, and the late Professor Dewees, than whom we cannot admit any higher authority in midwifery, to correct this presentation in the early stage by bringing the occiput into such a position as will permit it to emerge under the arch of the pubis, to be the best; but it must be admitted that the observations of Naegele show that nature herself will often accomplish this, and even where she fails to do so, we have several modern authorities for non-interference, and who maintain that though the labour is more protracted, still delivery may take place with safety to mother or child.

These we consider however as points of secondary interest—of importance only that injustice may not be done to individuals—they leave the main question, the propriety and advantage of demonstrative midwifery as practiced in Buffalo, unaffected. Respecting this, we must concur with the reviewer in all that is said of it both as a means of furnishing instruction and on the score of expediency and propriety. And these sentiments are not confined, as it is supposed by some, to a small minority of the profession. We have yet to meet with a single respectable physician in Philadelphia who does not concur in it; indeed, it is so far as we have been able to learn the unanimous sentiment of the profession in this city, and if we may judge from our sources of information, that of a large majority of the profession in the United States.

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SPRING TERM.

The Thirty-Third Session will open on the second Monday in March, 1851, under the direction of the following faculty, viz:—

BENJ. W. DUDLEY, M. D., Emeritus Professor of Surgery.

ROBERT PETER, M. D., Professor of Chemistry and Pharmacy.

ETHELBERT L. DUDLEY, M. D., Professor of the Principles and Practice of Surgery.

SAMUEL ANNAN, M. D., Professor of the Theory and Practice of Medicine.

HENRY M. SKILLMAN, M. D., Professor of General and Pathological Anatomy and Physiology.

JOHN R. ALLEN, M. D., Professor of Materia Medica and Therapeutics.

SAMUEL M. LETCHER, M. D., Professor of Obstetrics and the Diseases of Women and Children.

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Lexington, Ky., Dec., 1850.

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RUSH VANDYKE, M. D., Materia Medica and General Therapeutics.

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For further information, inquire of

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PHILADELPHIA, Dec. 14, 1850.

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MEDICAL INSTITUTE OF PHILADELPHIA, 1851.

The Annual Course of Lectures will be commenced on the 1st Monday in April, and be continued during the Summer, with the usual recess.

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General and Special Anatomy, - - - -	By JOHN NEILL, M.D.
Materia Medica and Therapeutics, - - - -	" J. J. REESE, M.D.
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SPRING TERM, 1851.

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CHARLES A. LEE, *Dean*.

N. B.—The profession will take notice that the Lecture Term in Geneva College will hereafter be changed from the Fall to the Spring of the year, to commence the ensuing March, 1851. This change in the time of delivering the Lectures is made solely with the view of accommodating that large class of Medical Students who cannot conveniently attend during the Fall and Winter months, but whose term of study expires in the Spring.

GENEVA, March, 1850.

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JOHN J. REESE, M.D., *Lecturer on Materia Medica in the Phila. Med. Institute.*

PHILADELPHIA, March, 1850.

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JOHN P. LITTLE, M. D., *of Richmond, Va.*
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WM. B. MORTON, M. D., *of Paterson, N. J.*
JOHN NEILL, M. D., *Demonstrator of Anatomy in the University of Pennsylvania.*
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JULIUS S. TAYLOR, M. D., *of Carrolton, Montgomery Co., Ohio.*
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J. MASON WARREN, M. D., *one of the Surgeons to the Massachusetts General Hospital.*
JOHN WATSON, M. D., *Surgeon to the New York Hospital.*
H. W. WILLIAMS, M. D., *of Boston.*
J. WILSON, JR., M. D., *formerly of Philadelphia.*

TO READERS AND CORRESPONDENTS.

Dr. WARREN's cases of Occlusion of the Vagina relieved by operation, and Dr. THAYER's cases of Apoplexy and the various forms of softening of the Brain, are in type for our next number.

The communications of Drs. W. M. WOOD, G. W. BASKIN, R. MCSHERRY, J. H. RAUCH, and W. J. BARNETT, are on file for publication. We have other papers under consideration, in relation to which their authors shall hear from us at an early period.

The following works have been received:—

Essays and Notes on the Physiology and Diseases of Women, and on Practical Midwifery. By JOHN ROBERTON, formerly Senior-Surgeon in ordinary to the Manchester and Salford Lying-in Hospital and Dispensary for the Diseases of Women and Children. London: John Churchill, 1851. (From the Author.)

Notes of a recent visit to several Provincial Asylums for the Insane in France. By JOHN WEBSTER, M. D., F. R. S. London, 1850. (From the Author.)

On the Health of London during the six months terminating Sept. 28th, 1850. By JOHN WEBSTER, M. D., F. R. S. London, 1850. (From the Author.)

First Principles of Medicine. By ARCHIBALD BILLING, M. D., F. R. S., the second American from the revised and improved fifth London edition. Philadelphia: Lea & Blanchard, 1851. (From the Publishers.)

Operative Surgery. By FREDERIC C. SKEY, F. R. S. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

New Remedies: with Formulæ for their Administration. By ROBLEY DUNGLISON, M. D., Professor of Inst. of Medicine, &c., in Jefferson Medical College. Sixth edition, with extensive additions. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

A Treatise on Dislocations and Fractures of the Joints. By Sir ASTLEY COOPER, Bart., F. R. S., &c. A new edition, much enlarged, edited by BRANSBY B. COOPER, F. R. S., Surgeon to Guy's Hospital. With additional observations, and a memoir of the author. A new American edition. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

The Dissector; or Practical and Surgical Anatomy. By ERASMUS WILSON, Author of a "System of Human Anatomy," &c. With one hundred and fifteen illustrations. Edited by PAUL B. GODDARD, M. D. A new and improved edition. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

Report of a General Plan for the Promotion of Public and Personal Health, revised, prepared, and recommended, by the Commissioners appointed under a Resolve of the Legislature of Massachusetts relating to a Sanitary Survey of the State. Presented April 25th, 1850. Boston, 1850. (From the Author, L. SHATTUCK, Esq.)

Elements of Medical Jurisprudence. By THEODORIC ROMEYN BECK, M. D., LL.D., Professor of Materia Medica in the Albany Medical College; and JOHN B. BECK, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the city of New York. Tenth edition, Vol. II. Albany, 1851. (From Dr. T. R. Beck.)

Reduction of Strangulated Hernia in Mass. By GEO. C. BLACKMAN, M. D. New York, 1851. (From the Author.)

A History of the Disease usually called Typhoid Fever, as it has appeared in Georgetown and its vicinity, with some Reflections as to its Causes and Nature.

By W. L. SUTTON, M. D., Georgetown, Ky. Louisville, 1850. (From the Author.)

Illustrations of Syphilitic Disease. By PHILIP RICORD, D. M. P. &c. Translated from the French by THOMAS F. BETTON, M. D., &c. With the addition of a History of Syphilis, and a complete Bibliography and Formulary of Remedies, collated and arranged by Paul B. Goddard, M. D. With fifty large quarto plates, containing one hundred and seventeen beautifully coloured illustrations. Phila., A. Hart, late Carey & Hart, 1851, 4to. (From the Publisher.)

A Practical Treatise on Dental Medicine, being a Compendium of Medical Science, as connected with the study of Dental Surgery. By THOS. E. BOND, M. D., Prof. of Dental Pathol. and Therap. in Balt. Coll. Dental Surgery. Phila., Lindsay & Blakiston, 1851. (From the Publishers.)

Ether and Chloroform, their employment in Surgery, Dentistry, Midwifery, Therapeutics, &c. By J. F. B. FLAGG, M. D., Surgeon Dentist. Phila., Lindsay & Blakiston, 1851. (From the Publishers.)

The Medical Student's Guide in Extracting Teeth, with numerous cases in the Surgical Branch of Dentistry, with illustrations. By S. S. HORNER, Practical Dentist. Phila., Lindsay & Blakiston, 1851. (From the Publishers.)

History of Medical Education and Institutions in the United States, from the first settlement of the British Colonies to the year 1850; with a chapter on the present condition and wants of the profession, and the means necessary for supplying those wants, and elevating the character and extending the usefulness of the whole profession. By N. S. DAVIS, M. D., Prof. of Prin. & Pract. of Med., in Rush Med. Coll., &c. &c. Chicago, 1851. (From the Author.)

On Diseases of Menstruation and Ovarian Inflammation, in connection with Sterility, Pelvic Tumours, and Affections of the Womb. By EDWARD JOHN TILT, M. D., Physician to the Farrington General Dispensary. New York. S. S. & W. Wood, 1851. (From the Publishers.)

Consumption of the Lungs, or Decline: the Causes, Symptoms, and Rational Treatment, with the Means of Prevention. By T. H. YEOMAN, M. D. Revised by a Boston Physician. Boston, 1850.

Annual Report of the Royal Edinburgh Asylum for the Insane, for the year 1849. Edinburgh, 1850.

Report of the Board of Visitors of the Boston Lunatic Hospital, containing a statement of the condition of that Institution, and transmitting the Annual Report of the Superintendent for 1850. Boston, 1850. (From Dr. C. H. Stedman.)

Twenty-third Annual Report of the President and Directors of the Western Lunatic Asylum, 1850. Richmond, 1850. (From Dr. F. T. Stribling.)

An Address delivered before the Erie County Medical Society, Jan. 7th, 1851. By Rev. WM. FLINT, M. D. Erie, 1851.

Report of the Pennsylvania Hospital for the Insane, for the year 1850. By THOMAS S. KIRKBRIDE, M. D., Phys. to the Institution. Phila. 1851. (From the Author.)

The Twenty-second Annual Report of the Inspectors of the Eastern State Penitentiary of Pennsylvania. Transmitted to the Senate and House of Representatives, March, 1851. Philadelphia, 1850. (From R. A. Given, M. D.)

Annual Report of the Officers of the New Jersey State Lunatic Asylum, at Trenton, for the year 1850. Trenton, 1851. (From Dr. H. Buttolph, Superintendent.)

An Introductory Lecture delivered at the opening of the thirty-first Session of the Medical College of Ohio, Nov. 4th, 1850. By JOHN BELL, M. D., Professor of Theory and Practice of Medicine, &c. &c. Cincinnati, 1850. (From the Author.)

Impediments to the Study of Medicine. A Lecture Introductory to the course of Practice of Medicine. By J. K. MITCHELL, M. D., Prof. of Pract. Med. Delivered Nov. 18th, 1850. Phila. 1850. (From the Author.)

Success in the Medical Profession. An Introductory Lecture, delivered at the Massachusetts Medical College, Nov. 6th, 1850. By JOHN WARE, M.D., Hersey Prof. of the Theory and Practice of Medicine, in Harvard University, Boston, 1851. (From the Author.)

Proceedings of the Convention and Missouri State Medical Association, held at St. Louis in Nov. 1850. St. Louis, 1850.

Constitution, By-Laws, and Proceedings of the Iowa State Medical and Surgical Society organized June 19, 1850. Burlington, 1850.

The Memorial of M. B. Wright in relation to the Medical College of Ohio; the official misconduct of its trustees; the mal-administration of its affairs; and the dangerous position of the Commercial Hospital, read to the forty-ninth General Assembly. Columbus, 1851. (From the Author.)

Minority Report of the Trustees of the Medical College of Ohio. Senate, Jan. 8, 1851.

Catalogue and Circular of the Albany Medical College. Albany, 1851.

First Annual Announcement of the Medical Department of the University of Nashville. Nashville, 1851.

Circular of the Institution for the Education of Idiots, Imbeciles, and Children of Retarded Development of Mind. Barre, Mass., Jan. 1, 1851. Worcester, 1851. (From H. B. Wilbur, M. D.)

The following Journals have been received in exchange:—

Gazette Médicale de Paris, July, August, September, October, 1850.

Revue Médicale Française et Etrangère. Par J. B. CAYOL, Prof. de Cliniques, July, August, September, 1850.

Journal des Connaissances Médico-Chirurgicales. Publié par le Dr. A. MARTIN LAUZER. July, August, September, October, 1850.

Annales Médico-Psychologiques. Par les Docteurs BAILLARGER, BRIERRE DE BOISMONT, ET CERISE. July, October, 1850.

Journal des Connaissances Médicales Pratiques et de Pharmacologie. July, August, 1850.

The Edinburgh Medical and Surgical Journal. Jan., 1851.

The London Medical Gazette. Dec., 1850, Jan., Feb., 1851.

The British and Foreign Medico-Chirurgical Review. Jan., 1851.

The Monthly Journal of Medical Science. Jan., Feb., March, 1851.

London Journal of Medicine. Jan., Feb., March, 1851.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M. D. Jan., 1851.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. RANKIN, M. D. Cantab. vol. xii. July—Dec., 1850.

The Dublin Quarterly Journal of Medical Science. Feb., 1851.

The Institute, a Journal of Medical, Surgical, and Obstetrical Science and Practice, and Philosophical Gazette. Oct., Nov., Dec., 1850, Jan., Feb., 1851.

The Retrospect of Medicine. By W. BRAITHWAITE, July—Dec., 1850.

Dublin Medical Press. Nov., Dec., 1850, Jan., Feb., 1851.

The Western Lancet. Edited by L. M. LAWSON, M. D., and GEO. MENDENHALL, M. D. Jan., Feb., March, 1851.

Northern Lancet and Gazette of Legal Medicine. Edited by F. J. D. AVIGNON, M. D., and H. NELSON, M. D. Jan., Feb., March, 1851.

Buffalo Medical Journal. Edited by AUSTIN FLINT, M. D. Jan., Feb., March, 1851.

The American Journal of Insanity. Published by the New York State Lunatic Asylum. Utica, Jan., 1851.

The New Jersey Medical and Surgical Reporter, and Transactions of the New

Jersey Medical Society. Edited by JOSEPH PARRISH, M.D. Burlington, Jan., 1851.

The Charleston Medical Journal and Review. Edited by Dr. J. CAIN, M.D., and F. P. PORCHER, M.D. Jan., March, 1851.

The New Orleans Medical and Surgical Journal. Edited by A. HESTER, M.D., Jan., March, 1851.

The New York Medical Gazette and Journal of Health. Edited and published by D. M. REESE, M.D. Jan., Feb., March, 1851.

Western Journal of Medicine and Surgery. Edited by L. P. YANDELL, M.D., and T. S. BELL, M.D. Jan., Feb., March, 1851.

The North Western Medical and Surgical Journal. Edited by Dr. EVANS and MEEK. Jan., 1851.

The Ohio Medical and Surgical Journal. Edited by RICHARD L. HOWARD, M.D. March, 1851.

The American Journal of Science and the Arts. Conducted by Professors B. SILLIMAN, B. SILLIMAN, Jun., and JAS. D. DANA, aided in the Department of Chemistry and Physics by Dr. WALCOTT GIBBS. January, March, 1851.

The New York Register of Medicine and Pharmacy. Edited by C. D. GRISWOLD, M.D. January, February, March, 1850.

The Western Medico-Chirurgical Journal. Edited by Drs. J. F. SANDFORD and S. G. ARMOR. December, 1850. January 7, February 1, 1851.

Southern Medical and Surgical Journal. Edited by L. A. Dugas, M.D. January, February, March, 1851.

The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. PURPLE, M.D. January, March, 1851.

St. Louis Medical and Surgical Journal. October, December, 1850, Jan., Feb., 1851.

The American Journal of Pharmacy. Published by Authority of the Philadelphia College of Pharmacy. Edited by WILLIAM PROCTER, Jr., Professor of Pharmacy. January, 1851.


The Medical Examiner and Record of Medical Science. Edited by F. G. SMITH, M.D. and J. B. BIDDLE, M.D. January, February, March, 1851.

The Stethoscope and Virginia Medical Gazette. Edited by F. C. GOOCH, M.D. January, February, March, 1851.

Nordamerikanischer Monatsbericht für Natur-und Heilkunde Redigirt. Von Dr. W. KELLER und Dr. H. TIEDEMANN. January, February, March, 1851.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M.D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London*; or to John Wiley, or G. P. Putnam, *New York*; or W. D. Ticknor, *Boston*; or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

 The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. XLII. NEW SERIES.

APRIL, 1851.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART.	PAGE
I. An Account of two remarkable Indian Dwarfs exhibited in Boston under the name of Aztec Children. By J. Mason Warren, M. D. [With two plates.]	285
II. Case of Gunshot Wound in Left Axilla—Ligature of Left Subclavian, and subsequent Ligatures of Brachial and Subscapular Arteries. By John Watson, M. D., Surgeon of the New York Hospital. Reported by William H. Morton, M. D., of Patterson, N. J.	294
III. Observations on the Dumb-Bell Urinary Deposit. By John Bacon, Jr., M. D. (Read before the Boston Society for Medical Observations, December 16th, 1850.)	297
IV. On some of the Remote Effects of Injuries of Nerves. By Charles W. Parsons, M. D. (Read before the Rhode Island Medical Society, Providence, December 18th, 1850.)	306
V. Extracts from the Records of the Boston Society for Medical Improvement. By Wm. W. Morland, M. D., Secretary.	319
VI. Remarkable Obstetrical Cases. By William P. Johnston, M. D., Professor of Obstetrics, &c., in the National Medical College, Washington, D. C. [With a wood-cut.]	340
VII. Hot Water in Sprains. By Samuel Jackson, M. D., formerly of Northumberland.	344
VIII. Report on Idiotic Crania, Idiocy, and Cretinism. By Samuel Kneeland, Jr., M. D., Boston. (Read before the Boston Society for Medical Improvement, Jan. 13, 1851.)	349
IX. Case of Hæmoptysis Neonatorum. By Charles G. Adams, Jr., M. D., of Keene, N. H.	364
X. On a new form of Phosphate of Lime in Crystals; as it occurs in Putrefying Urine. By Jno. C. Dalton, Jr., M. D. (Read before the Boston Society for Medical Observation, Feb. 17, 1851.) [With seven wood-cuts.]	368
XI. A case of Double Ovarian Dropsy—both Ovaries successfully removed by the large Peritoneal Section. By E. R. Peaslee, A. M., M. D., Prof. of Surgery in the Medical School of Maine.	371
XII. Cases in Surgical Practice. By R. H. McIlvaine, M. D., Charlotte, N. C.	387

REVIEWS.

ART.	PAGE
XIII. Report of the Sanitary Commission of Massachusetts, made by the Legislature in 1850. Printed by order of the Legislature. Boston: Dutton & Wentworth, State Printers, 1850. 8vo. pp. 544. -	391
XIV. Musée d'Anatomie de la Faculté de Médecine de Strasbourg—Histoire des Polypes du Larynx. Par C. H. Ehrmann, Professeur à la Faculté de Médecine de Strasbourg, &c. &c. &c. Fol., avec six planches lithographiées: pp. 58. Strasbourg, 1850.	
Anatomical Museum of the Faculty of Medicine in Strasbourg—History of Polypus of the Larynx. By C. H. Ehrmann, Professor to the Faculty of Medicine of Strasbourg, &c. &c. &c. Fol., with six lithographic plates: pp. 58. Strasbourg, 1850. - - - - -	410

BIBLIOGRAPHICAL NOTICES.

XV. Elements of Medical Jurisprudence. By Theodoric Romeyn Beck, M. D., LL. D., Prof. Mat. Med. in the Albany Medical College, &c. &c., and John B. Beck, M. D., Prof. Mat. Med. and Med. Jurisp. in the College of Physicians and Surgeons of the City of New York, &c. &c. Tenth edition. Vols. I. and II. Albany, Little & Co. 1851: 8vo. pp. 866—948.	
Medical Jurisprudence. By Alfred S. Taylor, F. R. S., &c. &c. Second American, from the Third London edition; with Notes and Additions by R. Eglesfeld Griffith, M. D., &c. Philadelphia, Lea & Blanchard, 1851: 8vo. pp. 670. - - - - -	417
XVI. A History of the Disease usually called Typhoid Fever, as it has appeared in Georgetown and its Vicinity; with some Reflections as to its Causes and Nature. By W. L. Sutton, M. D., Georgetown, Ky. Maxwell & Co., Louisville, 1850: 8vo. pp. 127. - - - - -	418
XVII. Illustrations of Syphilitic Disease. By Philip Ricord, D. M. P., Surgeon to the Venereal Hospital (Hôpital du midi), Paris, &c. &c. Translated from the French by Thomas F. Betton, M. D., M. A. N. S., Fellow of the College of Physicians of Philadelphia, &c. With the addition of a History of Syphilis, and a complete Bibliography and Formulary of Remedies, collated and arranged by Paul B. Goddard, M. D.; with fifty large quarto plates, comprising 117 beautifully coloured Illustrations. Philadelphia, A. Hart, late Carey and Hart, 1851. - - - - -	426
XVIII. On Anæsthesia and Anæsthetic Substances generally; being an Experimental Inquiry into their Nature, Properties, and Action; their Comparative Value and Danger; and the best Means of counteracting the Effect of an Overdose. By Thomas Nunnely, Esq., F. R. C. S. E., &c. &c. - - - - -	429
XIX. Sleep Psychologically considered with reference to Sensation and Memory. By Blanchard Fosgate, M. D., Physician to the New York State Prison at Auburn. New York, George P. Putnam, 1850: 12mo. pp. 188. - - - - -	439
XX. Notes of a Recent Visit to several Provincial Asylums for the Insane in France. By John Webster, M. D., F. R. S., Fellow of the Royal College of Physicians, Consulting Physician of St. George and St. James's Dispensary, &c. London, 1850: pp. 35. - - - - -	442
XXI. A Practical Treatise on Dental Medicine, being a Compendium of Medical Science as connected with the Study of Dental Surgery. By Thos. E. Bond, A. M., M. D., Professor of Special Pathology and Therapeutics in the Baltimore College of Dental Surgery. Philadelphia, 1851: pp. 324. - - - - -	444
XXII. Address before the American Medical Association, at the Anniver-	

ART.	PAGE
sary Meeting in Cincinnati, May 8th, 1850. By John C. Warren, M.D., President of the Association. Boston, 1850: 8vo. pp. 65.	- 447
XXIII. New Remedies, with Formulæ for their Administration. By Robley Dunglison, M. D., Prof. Inst. Med. &c., in Jeff. Med. Coll. Sixth edition, with extensive additions. Philad., Blanchard & Lea, 1851: 8vo. pp. 755.	- 447
XXIV. On Diseases of Menstruation and Ovarian Inflammation, in connection with Sterility, Pelvic Tumours, and Affections of the Womb. By Edward John Tilt, M. D., &c. &c. New York, Saml. S. & W. Wood, 1851: 12mo. pp. 286.	- 448
XXV. First Principles of Medicine. By Archibald Billing, M. D., A. M., F. R. S., &c. &c. Second American, from the revised and improved fifth London edition. Philad., Lea and Blanchard, 1851: 8vo. pp. 246.	- 448
XXVI. Review of Chemistry for Students, adapted to the courses as taught in the principal Medical Schools of the United States. By John G. Murphy, M. D. Philadelphia, Lindsay and Blakiston, 1851: 12mo. pp. 328.	- 448
XXVII. The Uses and Abuses of Air; showing its Influence in sustaining Life, and producing Disease; with remarks on the Ventilation of Houses.	449
XXVIII. Consumption of the Lungs, or Decline; the Causes, Symptoms, and Rational Treatment, with the means of Prevention. By T. H. Yeoman, M.D. Revised by a Boston Physician. Boston & Cambridge, J. Monroe & Co., 1850: 12mo. pp. 103.	- 449
XXIX. An Appeal to the Public in behalf of a Hospital for Sick Children. London, 1850.	- 450

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

ANATOMY AND PHYSIOLOGY.

PAGE	PAGE
1. Weight of the Brain at different periods of life. By Thos. B. Peacock, M. D.	- 451
2. Anatomy of the Subcutaneous Bursæ. By Mr. Wm. Coulson.	453
3. On the Round Ligament of the Uterus. By G. Rainey, Esq.	- 455
4. New Muscles of the Urethra. By H. Hancock, Esq.	- 456
5. Fistula of Stomach. By Dr. Robertson.	- 457
6. Researches to prove the Non-vascularity of certain Animal Tissues. By Mr. Toynbee.	- 457
7. On the Absorption of Alimentary Substances, and the Functions of the Lacteals. By M. Bernard.	- 457

MATERIA MEDICA AND PHARMACY.

	PAGE		PAGE
8. Evil Effects following the Incautious Administration of Chloroform. By Dr. Bagot. - -	458	11. On the Physiological Effects of Picrotoxine, or the Active Principle of Cocculus Indicus. By Dr. Routh. - - -	460
9. Effects of Chlorinated Hydrochloric Ether on Animals. By M. Flourens. - - -	459	12. On Iodognosis. By M. Dorvault. - - -	461
10. On the Inhalation of various Medicinal Substances. By Dr. Snow. - - -	459	13. New preparation of Phosphate of Iron. Dr. Routh. - -	462

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

14. The Chemistry of Tubercle, and the Special Pathological Anatomy of Tuberculosis. By Henry Ansell, Esq. - - -	462	23. Results of Revaccination in the Prussian Army during 1849. 478	
15. On Elastic Fibres found in the Sputa of Phthisis. By Professor Schroeder Van der Kolk. -	465	24. Abortive Treatment of Variola by the Application of Collodion. By M. Aran. - - -	479
16. Is Fibre an Essential Element in the Structure of Cancer? By Dr. Redfern. - - -	465	25. Combination of Auscultation and Percussion. By Dr. Roger. 479	
17. Value of a Chemical and Microscopical Examination of the Urine as a Means of Diagnosis in Renal Diseases. By Dr. Geo. Johnson. - - -	466	26. On Auscultation in the Pneumonia of Infants. By MM. Trousseau and Laëgue. - -	480
18. Cases of Renal Disease. By Dr. George Johnson. - -	467	27. Local Paralysis in Infancy. By Dr. Simpson. - - -	481
19. Diagnosis of Fatty Degeneration of Kidney. By Dr. Geo. Johnson. - - -	474	28. Recent Epidemic of Scarlatina at Berlin. By Dr. Helfft. -	482
20. On a Species of Atrophy of the Spinal Marrow. By Dr. Namias. 476		29. Cretinism. By M. Boudin. -	483
21. Vaccination as a Preventive of Small-pox. By Dr. Alexander Knox. - - -	477	30. Causes and Cure of Goitre. -	483
22. On Vaccination and Revaccination. By M. Craninx. - -	477	31. Chloroform in Lead-Colic. By Dr. Aran. - - -	484
		32. On the Treatment of Itch. By MM. Bazin and Bourguignon. - - -	485
		33. Disease of the Heart and Chorea. By M. Trousseau. -	485
		34. Sulphate of Zinc in Chorea. -	486
		35. On the Treatment of Obesity. By T. K. Chambers, M. D. -	488

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

36. Case illustrating the Difficulties of Diagnosis of Morbid Growths from the Upper Jaw. By Prescott Hewett. - - -	491	Femur. By Mr. Haynes Walton. - - - - -	508
37. Results of the Use of Chloroform in 9000 cases at St. Bartholomew's Hospital. By Mr. Skey. - - - - -	498	41. Case of Ovariectomy; Spontaneous Disappearance of Ovarian Tumours. By George Norman. - - - - -	509
38. Pathology and Treatment of enlarged Subcutaneous Bursæ. By Mr. Wm. Coulson. - - -	500	42. Case of Tumour for which the Operation of Ovariectomy was attempted more than twenty-five years ago, with Dissection. By Dr. Taylor. - - - - -	511
39. Treatment of certain cases of Hare-lip. By E. A. Lloyd, Esq. 505		43. Femoral Aneurism cured by Compression. By Mr. Smyly. 512	
40. Excision of the Head of the		44. New Instruments for the Cure	

	PAGE		PAGE
of Stricture. By Mr. Thomas H. Wakley. - - -	513	Stark. - - -	515
45. Rupture of the Crucial Ligament of the Knee-joint. By Dr.		46. Cotton Wadding as an Application to Bed-Sores and Varicose Ulcers. - - -	515

OPHTHALMOLOGY.

47. Preparatory and After-treatment in Cataract Operations.	By Arthur Jacob, M. D. -	516
---	--------------------------	-----

MIDWIFERY.

48. Case of Protrusion of the Hand of the Child through the Walls of the Vagina and Rectum in a case of Head Presentation. By Dr. James Gray. - - -	519	Henry Oldham, M. D. -	522
49. Central Laceration of the Perineum. By Dr. Thatcher. -	520	52. The Cæsarian Section and Premature Labour. By Dr. Robert Lee. - - -	523
50. Case in which the Cæsarian Section was performed, with remarks on the peculiar sources of danger attendant on the Operation. By Charles West, M. D.	521	53. Injury of Cranium and Wound of the Brain in a New-born Child—Recovery. By Dr. Lagae. - - -	524
51. Case of Cæsarian Section. By		54. Quintuple Birth. - - -	524
		55. Polypous Excrescences from Umbilicus in New-born Children. By Dr. Farrège. -	524

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

56. Identity. - - -	524	64. The Diseases to which Manufacturers of the Sulphate of Quinine are liable. By M. A. Chevalier. - - -	528
57. Abortion. - - -	525	65. Curare, Researches on it by MM. Pelouse and Cl. Bernard.	528
58. Ancient Trial for Impotence.	525	66. A Case of Abortion brought on by Savin, and followed by perforation of the Stomach, and Death. By James H. Salisbury, M.D. - - -	529
59. Absence of Milk after Delivery.	525		
60. Present Law of Virginia concerning the Crime of Abortion.	525		
61. Legal Definition of what constitutes a Wound. - - -	526		
62. Procuring Abortion, or rather Premature Birth. - - -	526		
63. Poisoning with <i>Cocculus Indicus</i> . - - -	527		

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Wills Hospital—Service of Dr. Isaac Hays—Cases discharged from Oct. 1st, 1850, to Jan. 1st, 1851. By A. F. Macintyre, M. D.	531	On the Importance of establishing a Lectureship on Dental Surgery in Medical Colleges. By E. B. Gardette. - - -	533
---	-----	---	-----

DOMESTIC SUMMARY.

Femoral Aneurism cured by Compression. By Dr. W. H. Church.	535	Case of Cæsarian Section. By H. M. Jeter, M. D. - - -	538
Coup de Soleil, or Sun Stroke. By Frederick D. Lente, M.D.	536	On the Law governing the distribution of the Striped and Un-	

	PAGE		PAGE
striped Muscular Fibre. By Dr.		Two Cases of Mumps, with Metas-	
H. F. Campbell. - - -	539	tasis to the Brain, both terminat-	
Prof. J. E. Cooke's Antilithic Paste.	540	ing fatally. By Dr. Harvey	
The Difficulty of Breathing from		Lindsly. - - -	542
an Overdose of Opium relieved		Dislocation of the Radius and Ulna	
by Inhaling the Vapour of		backwards at the Elbow. By	
Water. By Dr. C. W. Wright.	540	Professor Dugas. - - -	543
Refracture of a Leg to Improve		An Act to Promote Medical In-	
Defective Surgery. - - -	541	quiry and Instruction. By Mr.	
Aphonia and Obstinate Cough		Tuthill. - - -	544
from Prolongation of the Uvula.		American Medical Association. -	544
By Dr. T. C. Ready. - - -	541		



AZTEC DWARF (MALE).



AZTEC DWARF (FEMALE).



THE
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FOR APRIL 1851.

ART. I.—*An Account of two remarkable Indian Dwarfs exhibited in Boston under the name of Aztec Children.* By J. MASON WARREN, M. D. [With two plates.]

Two children have appeared in Boston so remarkable for their smallness of stature and the peculiarities of their mental faculties, that they seem to merit some public notice. I propose to state, in the following paper, simple matters of fact, without attempting any speculations in regard to them.

The children are a boy and girl, and from the appearance offered by their dentition, hereafter to be given, the former is from seven to eight years of age, the latter from four to six; allowance being made for a retarded condition of these organs, on account of the otherwise abnormal want of development of the whole body. The boy is thirty-three and three-quarters inches in height, and his weight twenty and three-eighths pounds. The girl is twenty-nine and a half inches high, and her weight seventeen pounds. Their skin is of a dark yellowish cast, lighter than what is generally attributed to the Indian in this part of the country, and somewhat darker than that of the mulatto. The hair at the middle parting rises at an inch distant from the root of the nose, but on each side a fine hair descends quite to the edge of the orbit. In the boy, it is black, coarse, and quite stiff—in the girl, wavy and curled. The eyes are large and lustrous. The nose of the boy is quite prominent, and as seen in profile somewhat arched, but seen in front it is a little flattened at the apex; the nostrils are expanded, this feature being less marked in the girl than in the boy. The line of the nostril is oblique, instead of being longitudinal as in the Caucasian race. The separation of the cartilages at the apex is not easily distinguished. The supra-orbital ridges are very prominent, the head

receding directly behind. There are no superciliary prominences or tubercles. In the boy a ridge, with its convexity towards the median line, extends from the external angular process of the frontal bone along the edge of the parietal bone, and nearly joins the elevated occipital ridge. The occipital bone is much flattened from behind forwards. The continuation of the sagittal suture through the frontal bone to the ossa nasi, corresponding with the foetal division, is also elevated into a ridge in the male, but not in the female. A circumstance of some interest is the situation of the external auditory foramen, which is much more in a line with the orbit than usual, a fact I have observed in some small heads of low intelligence. There are no indications that artificial compression has ever been used.

In both the children, the upper jaw projects considerably beyond the lower, the mouth remaining partly open in the boy from a dropping of the lower jaw, which leaves the teeth exposed.

The combination of these two circumstances, connected with a slight escape of the saliva, which may be partly attributed to the irritation caused by dentition, gives a more unintelligent expression to the face when at rest than it would otherwise have. The upper lip is large, and appears swollen as in strumous subjects. The chin is receding.

The anatomical proportions of the girl seem to be in most respects as perfect as could be desired; with regard to the boy, the following are worthy of notice. The forearm is generally maintained in a slightly bent position, and in a state of semi-pronation, permitting neither entire extension nor perfect supination, forming laterally an external obtuse angle with the arm. The little finger is malformed, being shorter than usual, its tip extending only a little beyond the middle joint of the adjacent one; the last joint is inflexible, and the natural folds on the back of the phalanges, which denote its position, are wanting. A slightly webbed appearance is given to the fingers by an increased development of the interphalangeal folds of skin. The hand itself is quite short, broad, and thick.

With regard to the organs of generation, there is a slight malformation of the penis, the urethral aperture being more open than usual, thus approximating to hypospadias. The frenum is wanting. The testicles have not descended into the scrotum, and cannot be distinguished in the groin.

The position generally assumed by these children is peculiar, and may well be compared to that of some of the Simian tribe. The head, particularly in the boy, is thrown forward, as if placed more in advance on the spine than usual. This is accompanied with a slight stoop of the shoulders, and bending of the knees, the whole attitude being well delineated in the accompanying graphic sketches by Dr. Dalton. (See Plates I. and II.) The motion is unsteady, as in the tribe of animals already referred to, the boy having a swinging gait, not unlike that of a person slightly intoxicated.

The measurements of some parts of the body and skeleton are as follows:

<i>Boy.</i> —Height			33 $\frac{3}{4}$	inches.	
Spine	-	-	16	"	
Arm (humerus)	-	-	6 $\frac{3}{4}$	"	
Forearm	-	-	5 $\frac{1}{2}$	"	
Hand, length	-	-	4	"	Breadth 2 $\frac{1}{4}$ inches.
Femur	-	-	9	"	
Tibia	-	-	7 $\frac{1}{2}$	"	
Left lower extremity	-	-	17 $\frac{1}{2}$	"	Foot 5 inches.
Circumference of chest	-	-	18 $\frac{1}{2}$	"	
"	waist	-	17	"	
"	pelvis	-	17	"	
<i>Head.</i> —Circumference over hair and					
scalp	-	-	13	"	
Antero-posterior diameter			4 $\frac{1}{4}$	"	
Bi-temporal	"	not quite	4	"	
From one auditory passage to the					
other, around the forehead			7 $\frac{1}{2}$	"	
Do. over top of head	-	-	8	"	
Do. around the occiput	-	-	5 $\frac{1}{2}$	"	
Fronto-occipital curve	-	-	8	"	
Ear	-	-	2	"	
Facial angle	-	-	60	"	

The measures of the head were taken over the hair, and of course include the scalp, so that, if allowance be made for these, the actual measurement of the bone would be at least an inch less in the circumference of the head, and proportionately in the others.

The following is the state of dentition in the boy, being in part anomalous. The first four permanent molars, which appear between six or seven years of age, are present.

Upper Jaw.—2 Permanent molars.

3 of the deciduous molars—one on the left, two on the right, having lost one since he has been here.

2 Cuspidati, both probably of first set.

2 Lateral incisors, deciduous.

Lower Jaw.—2 Permanent molars.

2 Deciduous molars.

2 Permanent central incisors.

2 Lateral incisors.

On the left side of the lower jaw, in the place of the cuspidatus, is a large worn tooth, similar to a molar of the first set, and which might easily be taken for one; there is no corresponding tooth on the other side, the cuspidatus being wanting, and the first milk molar coming next to the lateral incisor.

The pulse, observed at different times, varied from 80 to 100, irregular in rhythm, much increased on the slightest exertion.

Girl.—Pulse regular, from 80 to 90. Resp. 20.

Height	-	-	29½ inches.	
Spine	-	-	15½	"
Humerus	-	-	6	"
Ulna	-	-	5	"
Hand	-	-	4	"
Lower extremity	-	-	15	"
Circumference of chest			19	"
"	waist		16	"
"	pelvis		16	"
Head	-	-	13	" in circumference.
Antero-posterior diameter			4½	"
Lateral	"		3¾	"
Over top of head, from one auditory passage to the other			8	"
Ear	-	-	1¾	"
Facial angle	-	-	65	"
Teeth, 10 in each jaw, deciduous, normal; all perfectly sound and white.				

Foot, 4½ inches.

Third toe short, same length as fourth.

It may not be uninteresting to state that these children were vaccinated, first the boy, and eight days after the girl was vaccinated from her brother. The disease took well, and went through the usual normal stages. About three weeks after the vaccination, both were attacked on the same day with chicken pox, which pursued a perfectly regular course, and was unattended with any strongly-marked constitutional symptoms.

A question naturally arises to an observer first visiting these beings, whether they belong to the human species, and it is only after the eye becomes accustomed to their appearance that the brotherhood is acknowledged.

I will not here enter into a description of their appearance: it is rather agreeable, in a degree intelligent, and with nothing repulsive, as would be expected in the usual abnormal specimens of the human race. They are both quite apt to comprehend what is said to them, particularly if accompanied by appropriate gestures, although any continued conversation evidently could not be understood. They are, in fact, without any language of their own. They seem to acquire words readily, and since their sojourn in Boston, have learned to repeat a number, such as "Papa," "Mamma," "Ellen," "Take care," &c., and evidently are capable of instruction to a limited extent. They are quite imitative, and in this respect nothing escapes them. With regard to any communication by signs or language which they may have with each other, it appears to be at present not much greater than what might be expected from two intelligent individuals of the canine race, although in the expression of their feelings they occasionally make use of an unintelligible jargon of

sounds together, which by some might be interpreted as an attempt at language.

As to their habits, they are those of children of two or three years of age, requiring the care of superiors to feed and clothe them. The propensity to constant feeding may also be considered as remarkable, and although at present under the intelligent management of the person who has them in charge, their diet and regimen have been reduced to a system; yet, if left to their own inclinations, they would undoubtedly keep themselves filled with food. With the exception of a catarrhal affection, which might be expected from their exposure to a cold climate, their health seems good; and their strength, as manifested by an almost incessant movement from morning till night, is not to be complained of.

The most remarkable point of interest in these children is the size of the head, and in this respect, considering the amount of intelligence, they are the smallest which have come under my observation. For the sake of comparison, I propose to give the measurements of some very small heads, those belonging to infants, idiotic children, and also the heads of the quadrumana, who most nearly approximate to man; this method, apparently, being the best adapted to place the present specimens in a striking point of view.

It has already been stated that the heads of these children are about thirteen inches in circumference, and if the hair and scalp be allowed for in the measurement, an inch may be deducted, making them twelve. The antero-posterior diameter is four and one fourth, bi-temporal about four.

The head of an infant at birth was as follows:—

Ant.-post. diameter	-	-	-	-	4 $\frac{3}{4}$ inches.
Bi-temporal	-	-	-	-	3 $\frac{3}{4}$ “
Circumference	-	-	-	-	13 $\frac{1}{4}$ “
Over top of head from ear to ear	-	-	-	-	8 “
Occipito-frontal	-	-	-	-	8 $\frac{1}{4}$ “

A girl four and a half years old—

Circumference	-	-	-	-	20 “
Occipito-frontal	-	-	-	-	13 “
Over head from ear to ear	-	-	-	-	13 “

A boy nine years old—

Twenty-two inches in circumference.

Head of an idiot child from Spurzheim's collection—

Circumference	-	-	-	-	14 inches.
Ant.-post. diameter	-	-	-	-	5 “
Bi-temporal	-	-	-	-	3 $\frac{3}{4}$ “
Over top of head	-	-	-	-	7 $\frac{1}{2}$ “

Head of the remarkable dwarf Babet Schreier, of whom a description will be given below, thirteen inches, four lines, measured over the most prominent parts of the forehead and occiput.

Idiot boy, ten years old, with a small head, forty-eight inches high—

Circumference of head, over hair, $15\frac{3}{4}$ inches.

Young chimpanzee, twenty-six inches high—

Circumference of head, 13 inches.

Head of adult chimpanzee—

Ant.-post. diameter - - - - $4\frac{1}{2}$ inches.

Over top of head from ear to ear - 8 "

Occipito-frontal - - - - $7\frac{1}{2}$ "

Circumference - - - - 13 "

Young orang-outang—

Circumference - - - - 13 inches.

Ant.-post. diam. - - - - $4\frac{1}{2}$ "

Lateral " - - - - $3\frac{3}{4}$ "

Curve over top of head from ear to ear 8 "

Occipito-frontal curve - - - - $7\frac{1}{2}$ "

For the further illustration of this point, we will adduce the instance recorded by Pinel, in his "Treatise on Mental Alienation," as exemplifying "that degree of idiocy which is the extreme limit of human degradation, in which even instinct no longer exists." This sketch is accompanied by "a design of the cranium of the female idiot, who was at the Salpêtrière in 1805." She resembled the sheep both in her tastes, her mode of life, and the form of her head. She had an aversion to meat, and ate with avidity both fruit and roots; drinking nothing but water. Her demonstrations of sensibility, of joy and grief, were limited to the words, imperfectly articulated, "Bé," "Matate." She would alternately flex and extend the head, and rub it against the breast of her nurse. If she desired to resist or express her dissatisfaction, she sought to strike with the crown of the head inclined. She was extremely choleric, and many times I saw her in the bath, making efforts to get out, and repeating, in an acute tone, "Bé, bé, bé." The back, loins, and shoulders were covered with flexible black hair from one to two inches in length. She could never be induced to sit in a chair or upon a bench, even to take her food. No sooner was she seated than she slipped down upon the earth, and was accustomed to sleep with her extremities closely gathered about her after the manner of animals. Pinel examined this case, and furnished us with the dimensions of the head of this idiot compared with those of the cranium of a little girl of seven years.

		Idiot of 11 years.	Girl of 7 years.
Length of cranium	- -	5 in. 11	7.08
Breadth	- - - -	3 " 53	5.11
Depth	- - - -	5 " 11	6.29

The resemblance these children bear to some of the lower order of animals, especially those of the Simian tribe, is quite remarkable, and we are reminded of Lamarck's theory of the gradual development of the human being from the

lower created orders, and the transformation of quadrumana into the bimana. In regard to their relation to the quadrumana, we observed in the boy an approximation to the frontal crest of the orang; the supra-orbital ridges, and the parietal and occipital crests of the adult chimpanzee; the projecting jaws, the elongated forearm and its semi-flexed position; finally, the stoop of the whole body, with the air and appearance, forcibly reminds us of the monkey.

It has been thought that, in connection with the description of these children, it will not be found uninteresting to present brief sketches of two or three of the most celebrated dwarfs of whom history furnishes an authentic account, chiefly with a view to display their intellectual development.

BABET SCHREIER.—This dwarf was six inches in length at birth, and at the age of upwards of seven years, measured only twenty-three. Her weight at birth was a pound and a half; at the age just mentioned, it was eight and a quarter pounds.

"The intellectual functions of this girl are very little developed for one of her age; she has very little more intelligence than a child four years old. Her disposition is good; she is inquisitive, and has considerable power of imitation. If instructed in the principles of education, she would probably learn with ease. She is much more disposed to mirth, and more docile in the afternoon than in the forenoon, and testifies her satisfaction by a more joyful air, and greater pliancy of character.

"Being unaccustomed to fix her attention or to listen to what is said to her, she comprehends with some difficulty, and her judgment, for want of exercise, is slow and perplexed.

"She did not begin to speak until four years of age; but she understands all that is said to her. She actually endeavours to express her ideas, which seem to flow in rapid succession in a kind of German jargon to which she is accustomed, and accompanies her attempts with many gestures. I am convinced, by careful observation, that this little being enjoys the same natural, moral sensibility as any other individual."

We find, in the "*Histoire des Anomalies*" of Saint Hilaire, an historical account of some remarkable dwarfs, and particularly of the celebrated Jeffrey Hudson, Bébé, and Borwilaski.

JEFFREY HUDSON was born about the time of Charles I., at Oakham, England; at the age of seven or eight, he was presented in a pie to the queen, his height then being eighteen inches. This stature he retained till about thirty, when he suddenly increased to three feet nine inches. In his character as a courtier and a man, he seems to contradict the inferences of writers of the following ages, that dwarfs "are beings more degraded in the moral than in the physical capacity." For he finally became a captain in the royal army, and after the Restoration returned to England in 1682, where he died at the age of sixty-three years, accused of treason. Perhaps it may not be uninteresting to medical men, in the present state of medical ethics, to find that about 1636 he was sent to *France to procure a midwife for the queen.*

BEBÉ.—A sketch of Bébé will be found far more interesting in a scientific point of view.—Nicholas Ferry, commonly called Bébé, was born in Novem-

ber, 1741, of parents of the ordinary stature; he was born at the seventh month, after a very remarkable pregnancy; at birth, he measured seven or eight inches, and weighed less than a pound, yet the labour lasted forty-eight hours. It is said that he was carried to church on a plate covered with tow, and a wooden shoe was his cradle. His mouth was too small for the nipple of his mother, and therefore he sucked a goat; he had the small-pox when six months old; at eighteen months he began to speak, but was more than two years before he could walk. At five years of age, he was carefully examined by the physician of the Duchess of Lorraine; he then weighed nine pounds seven ounces (French), and his height was about twenty-two inches, being formed like a young man.

His intellect is represented as feeble; the utmost that could be taught him being to dance and beat time. Of reading, or religion, he had no conception, and after a separation of a fortnight he did not know his mother. He was susceptible of passions, such as desire, anger, and jealousy, and his discourse was without connection, and his ideas confined. At the age of fifteen, he was still lively, gay, and *débonnair*; but puberty wrought a serious change, his health declined, his features lost their smile, and, with every appearance of premature old age, he died June 9th, 1764, at the age of twenty-two and a half.

Skeleton of Bébé.—Ossification perfect.

Cranium greatly depressed between the two parietal and the occipital projections.

Nose projecting.—Nasal bones very large at their lower extremities.

Great toe much elongated.

The principal dimensions of the skeleton were—

Total height	2 feet, 9 inches, 6 lines.
Length of upper extremities	1 foot, 2 " 9 "
" humerus - -	7 " 3 "
Hand - - - -	3 " " "
Lower extremity - -	1 " 4 " 6 "
Femur - - - -	9 " " "
Foot - - - -	4 " " "

BORWILASKI was a Pole, and, like Bébé, of the court. Born at the full time, he was distinguished for his wit and learning. He could read, write, and speak both French and German. The writers of his time call him a perfect but diminutive, and Bébé an imperfect man. When twenty-two years old, Borwilaski was twenty-eight inches high; at this age he was married, and had afterwards several children, well-formed, and of the usual size. The paternity of Borwilaski was not received by all without credulity, even in his own days, and it sometimes gave rise to pleasantries which were supported with courage and patience.

Other dwarfs are mentioned; but I will only refer to the betrothed of Bébé, Theresa Souvray, of about his own age, but with whom his marriage was prevented by death. At the age of seventy-three, she was exhibited in Paris,

appeared chatty and gay, and danced with her sister, two years older, the height of the latter being only three and a half feet.

How far can these children, judging not only from their general size, but also from the smallness of the head, be supposed idiotic? Esquirol, in his "Treatise on Insanity," Am. ed. p. 466, defines the idiotic character at some length, but in a subsequent page does not consider it to depend upon any particular volume or form of the head, notwithstanding it is proper to observe that the smallest heads appertain to the most degraded class of idiots. And again, Gall, in the "Anatomy and Physiology of the Nervous System," has figured two very small crania, and limits intelligence to crania which are only from fourteen to seventeen inches in circumference.

In the report of Dr. Howe, before the Massachusetts State Legislature in 1850, two idiots are compared; the one with the smallest capacity for brain was decidedly more bright, quick, and intelligent than the other. The instance recorded by Pinel has already been given.

From a careful comparison of the observations of different authors with those we have ourselves made and here recorded upon these children, we are disposed to believe that, although of very low mental organization, they cannot be pronounced idiots of the lowest grade. Their senses of sight, hearing, smell, taste, and touch, as well as that of tact, seem complete. Their degree of intelligence has, in our opinion, decidedly improved since their arrival in Boston; and this capacity for education appears far greater than in the lowest idiots.

We need hardly advert to the idea that these singular creatures belong to any peculiar tribe of dwarfs; for it is a fact universally allowed by physiological writers, and expressly laid down by Geoffroy St. Hilaire, that dwarfs are impotent with individuals of ordinary height, and even among themselves, as proved by the experiments made by Catharine de Medicis and the Electress of Brandenburg: "Les plaisirs de l'amour les énervent promptement, et plus souvent leur deviennent funestes. C'est en partie à cette cause que, d'après quelques auteurs, il faut attribuer la vieillesse anticipée, et la mort de Bébé." And in a note he says, "Borwilaski is, at least to my knowledge, the only dwarf who is an exception to this rule. Is an exception in such a matter sufficient to destroy the rule? I can only refer to what has been said above of the paternity of Borwilaski."

[In order to explain some observations in the preceding paper which would otherwise appear obscure, it should be remarked that the children who are the subjects of it were exhibited in Boston as belonging to a race of dwarfs, the descendants of priests from an hitherto undiscovered city in Central America. The peculiar form of their heads, so exactly represented in the Travels of Mr. Stevens, as carved on some of the monuments in that region, and those on some of the Egyptian relics, seemed to favour this idea, as it was supported by a most ingenious and romantic story, descriptive of their discovery and transportation to America. It is now pretty well understood that they belong to some of the mixed tribes of Indians inhabiting Central America, and we hope hereafter to procure some exact details as to the peculiarities of their parents.]

ART. II.—*Case of Gunshot Wound in Left Axilla—Ligature of Left Subclavian, and subsequent Ligatures of Brachial and Subscapular Arteries.*

By JOHN WATSON, M. D., Surgeon to the New York Hospital. Reported by WILLIAM H. MORTON, M. D., of Paterson, N. J.

Nov. 25th, 1850. Post Van Pelt, of Paterson, N. J., boy, aged fourteen, of good constitution, was accidentally shot in the left axilla. The shot, to the number of twelve or fifteen, entered the axilla nearly at a right angle with the trunk of the body, and separately made but little external laceration. I first saw the patient three-quarters of an hour after the receipt of injury. There had been profuse arterial hemorrhage, which had ceased spontaneously.

Appearance of patient.—Skin cold, pale, and shrunken; pulse in sound extremity feeble and intermitting, and no perceptible pulse in injured arm.

Treatment.—Cold applications, and an anodyne at night.

26th. Patient has passed a comfortable night. Pulse in the sound arm 120; and, if not deceived by the pulsation of my own fingers, I detect a slight pulsation at the wrist of the injured extremity. The whole shoulder, arm, and vicinity of wound are much swollen. Cold dressings continued.

28th. Pulse 100; pulsation in the injured arm increasing slightly in regularity and fullness; and the swelling has somewhat subsided. The patient complains of no pain. Continue cold dressings.

29th. Much about the same; bowels opened by enema.

Dec. 3d. Patient improving. The swelling has nearly subsided. The wound is suppurating. The pulse on sound side soft, and beats at 110. Circulation in injured extremity becoming more regular each day. The patient complains of pain in hand and forearm. Ordered poultice of linseed meal to wound.

4th. Having left patient's house but a few steps, I was called back, and found considerable arterial hemorrhage, which was controlled at once by pressure over the subclavian artery. During the next thirty-six hours, the hemorrhage recurred five or six times, some four or five pints of blood being lost; which hemorrhages always yielded to compression on subclavian artery. Cold dressings ordered to be reapplied.

5th. Pulse on the sound arm 120, and hard; and faint pulsation in the injured arm. I noticed a small tumor forming in axilla of injured side, which proved to be a false aneurism. Tumor increasing rapidly; by night being as large as a goose's egg. On consultation, it was decided to ligature the subclavian artery.

6th. Having requested the aid of Dr. Watson, he proceeded to ligature the subclavian artery beyond the scaleni, while the patient was under the influence of ether. At this time the pulse at the wrist was imperceptible, but the aneurismal swelling in the axilla beat strongly. The steps of the

operation need not be detailed further than to say that, before securing the subclavian, the external jugular vein, and a small ascending vessel, probably a branch from the acromial artery, required the application of a ligature; and that very little blood was lost.

I visited the patient four hours after the operation, and found the aneurismal tumor and the swelling in the arm sensibly diminished, and no pulsation to be perceived. Pulse in sound arm 120. Patient in good spirits.

8th. -Aneurismal tumor burst and discharged a quantity of coagula and semi-fluid blood.

9th. Removed the outer dressings from wound made in operation. There was some discharge of grumous blood from this, and no indication of union. Pulse about 130, and hard, with a jerking feel; bowels moved by enema.

12th. Patient again improving; pulse better; respiration good; and less excitement about the vessels of the neck. There was a venous hemorrhage to-day from the incision above the clavicle, which ceased spontaneously, and did not return.

15th. Again removed dressings; wound looks healthy. The ligatures on the superficial vessels, and the main ligature, remain firm. Pulse 110, and softer.

18th. Both wounds suppurating finely. Strong hopes of patient. Four hours after my first visit a profuse hemorrhage occurred. The flow having ceased, its point of issue could not be ascertained, nor could I decide as to whether it was venous or arterial.

19th. The hemorrhage again occurred; it was now clearly arterial, and from the original seat of injury in the axilla; it ceased spontaneously. Pulse 120, and jerking.

20th. Dr. Watson, being summoned from New York, arrived just in time to witness a third recurrence of the arterial hemorrhage, which was tremendous. Not being able to control it by pressure, and the case admitting no delay for the administration of ether, he made an incision two and a half inches in length below the clavicle in the course of the subclavian artery, and through the pectoral muscles into cavity made by injury in axilla. The seat of hemorrhage not being readily discovered, the cavity was stuffed with pieces of sponge, and an incision about three inches long made in arm over brachial artery, which was found open, but flaccid and dry. It was then tied. The sponges were next carefully removed piece by piece, and we discovered that the repeated hemorrhages *subsequent* to the ligature of the subclavian were not from the lacerated brachial artery on the distal side, but from the channel of communication between the posterior scapular and subscapular arteries, which latter, with its accompanying nerve, lay gaping and much enlarged at the bottom of the cavity. The subscapular artery, which was still bleeding, was finally secured. The axillary artery was found to have been much disorganized by the original injury. A number of shot, lying loose, were scraped out with the other contents of cavity, which now remained dry.

Patient lost by this last hemorrhage nearly two quarts of blood without inducing syncope. After the operation, bandages were placed on the lower extremities, and stimulants administered with the view of supporting the circulation and inducing a vigorous reaction.

21st. Patient gradually sinking. Stimulants freely and frequently administered.

22d. Patient died this morning, having never rallied from last profuse bleeding. Previous to death, the arm showed symptoms of gangrene.

Autopsy.—The post-mortem examination was confined, by request of the friends of the patient, to the incision above the clavicle. The ligature on the subclavian artery was found loose, and the vessel obliterated some distance each way. (The superficial ligatures had come away previously on the 20th.) Union had taken place to a large extent at the seat of the operation, although there was a sinus along the course of the artery, terminating at the original seat of injury in axilla. Arm extensively gangrenous.

Remarks.—This case presents analogous features to one of Dr. Mott's, with the exception of the difficulties arising subsequent to the ligature of the subclavian artery—difficulties caused by the enormous sloughing process in the original wound. We would not have been justified in enlarging the wound, and tying both ends of the injured axillary artery, and the result of the case shows that such a procedure would have been of no service. The diagnosis was at first difficult, both as to vessel and extent to which the vessel was injured. Certainly the indications pointed out the axillary artery; but might not the injury of a minor vessel, with the profuse hemorrhage and shock to system, have produced the same symptoms? Again, hemorrhage had ceased upon my seeing patient, and pulse returned in a few hours (but feebly and intermittingly, indeed). And would ligatures upon both ends of bleeding vessel have prevented the terrible disorganization of the parts?

It will be perceived that the secondary hemorrhage prior to the operation took place on the 4th of December, eight days after the receipt of injury; and one day intervened between the first hemorrhage and the ligature of the subclavian. This delay was unavoidable. It will also be remarked that, during all these repeated bleedings, even up to the last operation, the pulse varied but little; and patient's strength, courage, and spirits remained good. Both operations were performed under great deficiency of light, so much so that the last required the aid of a candle. The venous hemorrhage, mentioned as occurring on the 12th, probably arose from the divided end of the external jugular, from loosening of the ligature.

Guthrie says that, "when there is a wounded artery which has been duly secured above and below the wound, or when there is an artery in a state from which it may be feared blood may flow, from any or whatsoever cause, the patient should never be allowed to stir from the recumbent position until the external wound has healed;" a precept which was most reli-

giously observed in this case. The last hemorrhages were brought on by the slight exertions made in micturating.

The "operation" on the subclavian ought to be considered successful, so far as that vessel was concerned, the patient being carried off by causes not altogether unforeseen, but unavoidable and totally unconnected with the ligaturing of the vessel. Dr. Watson says, "he regrets we did not resort to transfusion of blood immediately after checking the flow at the last operation." It certainly was worthy of trial, but I have some doubts as to the benefits that would have been derived from it; for the circulation having been but feeble in the injured arm from the day of the injury, and that circulation being still further diminished by last operation, leaving only the small acromial and the capillary circulation for the nourishment of the arm, gangrene was to be expected, and it did make its appearance; to check which, had the patient survived, would probably have required amputation at the shoulder-joint.

ART. III.—*Observations on the Dumb-Bell Urinary Deposit.* By JOHN BACON, Jr., M. D. (Read before the Boston Society for Medical Observation, December 16th, 1850.)

THE remarkable crystalline bodies, first described by Dr. Golding Bird, in 1842, under the name of *dumb-bells* (see *Guy's Hospital Reports*, vol. vii.), are among the rarer forms of urinary deposit. Their nature has never been satisfactorily determined. They always occur alternately with the octohedra of oxalate of lime, or mixed with them; and were regarded by Dr. Bird as zeolitic crystals of that salt. The term *zeolitic* is derived from the zeolites, a family of minerals which frequently form compact spherical masses made up of radiating acicular crystals. In the *American Journal of the Medical Sciences*, for July, 1850, is an article on the dumb-bells, by Dr. Frick, of Baltimore, in which he endeavours to prove that they consist of uric acid. The question as to their chemical composition is not only one of scientific interest, but of practical importance in its bearing on the treatment of oxaluria, an affection which is probably much more frequent than is generally supposed. A fine specimen of the deposit, for which I am indebted to Dr. Dalton, of Boston, has enabled me to make a microscopic examination, and a partial analysis.

In this specimen, the dumb-bells are mixed with octohedral crystals of oxalate of lime, generally very small, and some epithelium cells. They were prepared for examination by allowing the urine containing them to stand an hour or two, as the deposit subsides slowly; and after pouring off nearly the whole

fluid, adding distilled water to the remainder. After another interval of repose, this process was repeated; first with water, and subsequently with dilute alcohol, in which the deposit falls more readily, until the last portions left no stain when evaporated on a slip of glass. Both the dumb-bells and octohedra are insoluble in water and in alcohol.

I. *Microscopic Characters of the Dumb-bells.*—The microscope employed is a very excellent one, made by Charles A. Spencer, of Canastota, N. Y. I have since repeated the observations on mounted specimens, with a first-class microscope recently made by Nachet, of Paris, with the same results.

The dumb-bells, mounted dry, and examined by reflected light, are yellowish-white and semi-transparent, with a pearly lustre. The surface is slightly roughened by minute tubercular projections. In Canada balsam or in water, they appear by transmitted light nearly transparent and free from colour, excepting a yellow tinge. The general form is that of a dumb-bell. Many specimens have the shape of two kidneys with their concave surfaces opposed and connected by a short band. This form passes into that of a nearly circular body composed of two semicircles, nearly or quite in contact, but united only by a narrow neck. Every intermediate form between this and the dumb-bell can be found. There are also nearly circular bodies made up of four quadrants, united at the centre.

The striæ described by Dr. Bird are readily seen. They radiate in two general and opposite directions from a central point in the neck of the dumb-bell, and run without interruption to the surface of the heads, which is slightly tuberculated, but shows no projecting crystalline points. The striæ are composed of exceedingly fine and close lines, and become more and more curved, as they are farther from the axis of the dumb-bell. Besides the striæ, there are faint concentric bands parallel to the outline of the heads, and generally at right angles to the striæ. These are marked by lighter and darker shades of colouring, and are most distinct near the exterior. Usually four or five are visible; sometimes as many as eight. They are present in the small specimens, as well as the large, and can sometimes be traced nearly to the neck of the dumb-bell. In the nearly circular bodies, they have the same characters. They probably indicate successive deposits, or interruptions in the process of formation, like the concentric layers in calculi, which often exhibit a radiated structure also. The striated portion of the neck is generally surrounded by a more transparent substance, showing no structure, which fills up more or less of the interval between the heads. Specimens examined in the urine itself had the same characters.

The above is the appearance of the dumb-bells in their usual position. In thick and fluid Canada balsam, they can be rolled over and examined in different positions. In a side view, the general outline is oval, the very transparent substance nearly or quite filling the space between the heads, which are considerably narrower than when seen in front. The striated portion pre-

sents the figure of an hour-glass, the striæ diverging from a central point within the transparent envelop. The concentric bands present the same appearance as in a front view. The heads are not spherical, but considerably flattened, and the end view of the dumb-bells is oval, but they cannot be retained in this position long enough to be clearly seen. Some of the specimens mounted in solid Canada balsam show an oval figure, with striæ diverging in every direction from the centre, and are probably dumb-bells seen endwise. The nearly circular bodies appear as spheroids more or less flattened, in a side view.

II. *Size of the Dumb-bells and Octohedra.*—The dumb-bells in this specimen are considerably larger than those measured by Dr. Bird. In the following table, are given his measurements, in fractions of an English inch (taken from his work on “Urinary Deposits”), for comparison with mine. The first column of figures is Dr. Bird’s, and the second my own measurements.

Long diameter of large dumb-bells,	-	-	$\frac{1}{563}$	-	-	$\frac{1}{423}$
Short diameter of ditto,	-	-	$\frac{1}{750}$	-	-	$\frac{1}{635}$
Diameter of some nearly circular bodies,	-	-	$\frac{1}{500}$	-	-	$\frac{1}{312}$
Long diameter of smallest dumb-bells,	-	-	$\frac{1}{1420}$	-	-	$\frac{1}{940}$
Short diameter of ditto,	-	-	$\frac{1}{2500}$	-	-	$\frac{1}{1587}$
Length of a side of largest octohedra,	-	-	$\frac{1}{750}$	-	-	$\frac{1}{379}$
“ “ smallest octohedra,	-	-	$\frac{1}{5600}$	-	-	$\frac{1}{7700}$

There are very few large octohedral crystals in this specimen; their average size is about $\frac{1}{1000}$ th of an inch. My measurements were made with both an English and a French micrometer, which agreed very nearly.

III. *Action of the Dumb-bells on Polarized Light.*—Examined by the polarizing attachment of a Chevallier microscope (consisting of two Nicol’s prisms), the dumb-bells appear brilliantly illuminated on the dark field, exerting a powerful action on the polarized light. The heads exhibit concentric coloured bands traversed by a dark cross, an appearance commonly presented by groups of radiating acicular crystals. These coloured bands are most distinct near the exterior, and do not appear to coincide with the structural bands seen in ordinary light. The transparent substance investing the neck polarizes feebly. In the side view, an oval coloured band is seen near the outside of the dumb-bell, and the hour-glass striated portion is distinctly visible within its transparent envelop. The oval bodies which I suppose to be dumb-bells, seen endwise, show one or two nearly circular coloured rings near the centre, and an oval band near the outside. The nearly circular bodies exhibit concentric coloured bands within each segment, and are traversed like the dumb-bells by a dark cross. When the field is made bright by revolving one of the Nicol’s prisms 90°, the cross becomes white, and the coloured bands are faintly visible, their colours being complementary to those exhibited on a dark ground.

The accompanying octohedral crystals are nearly invisible on the dark field, exerting little or no action on polarized light.

IV. *Chemical Reactions of the Dumb-bells.*—The dumb-bells were submitted to the microscope without separation from the accompanying octohedra and epithelium cells. For the micro-chemical examination, they were freed from them as far as possible by diffusing the deposit in water in a watch-glass. A rotatory motion being given, the water was poured off as soon as the dumb-bells had settled to the bottom. Being larger and apparently heavier, they subside more quickly than the rest of the deposit. The few remaining octohedra were nearly all picked out under the microscope.

Experiment 1.—The dumb-bells, heated over a spirit lamp, on a slip of the thin glass used for covering microscopic objects, darken and finally become white again at a low red heat. Under the microscope, they are now opaque, but preserve their shape perfectly. The residue is insoluble in water, as before heating. In dilute acetic acid, it dissolves with effervescence. The solution, supersaturated by ammonia, gives no precipitate. Solution of oxalate of ammonia being added, a white granular precipitate falls, and, after some time, small octohedral crystals appear in the solution.

Experiment 2.—Heated before the blowpipe, on a strip of platinum foil, the dumb-bells become opaque and retain their shape without sign of fusion, even at a full white heat. A pointed slip of reddened litmus paper being moistened and brought in contact with a little heap of the ignited dumb-bells, its blue colour is restored at the tip. Dilute acetic acid dissolves the residue without effervescence. The solution gives with oxalate of ammonia a white precipitate composed of very minute octohedra.

Experiment 3.—Dilute acetic acid does not dissolve the dumb-bells. In tolerably strong acetic acid (containing 39 per cent. of glacial acid), they become very pale and transparent, the transparency commencing at the surface, and slowly penetrating to the centre of the heads. The striæ and concentric bands all disappear, and a transparent substance is left, which retains the form of the dumb-bell for a while. In half an hour, complete solution is effected. The solution, left to spontaneous evaporation, deposits an abundance of zeolitic forms. They are mostly circular, and are generally composed of two semicircular bodies united by a narrow neck. Every intermediate form exists between this and the dumb-bell, of which there are many small specimens. All these bodies exhibit fine radiating striæ, but none of the concentric layers present in the original dumb-bells; nor have they the transparent substance investing the neck. There are some small oblong bodies composed of two oval zeolitic forms united by a transparent substance; sometimes four of these ovals are connected in the shape of a cross. In polarized light, all these bodies exhibit the coloured rings and dark cross more distinctly than the original dumb-bells, forming splendid objects for the polarizing microscope. Mixed with the zeolitic forms, are a few groups of long four-sided prisms,

which polarize rather strongly. The result of this experiment is in perfect agreement with Dr. Bird's supposition, that the dumb-bells are zeolitic groups of crystals.

Experiment 4.—In dilute hydrochloric acid, the dumb-bells dissolve slowly and completely. The solution, on spontaneous evaporation, leaves groups of thin rhomboidal plates, very transparent, and polarizing powerfully. The rhomboids are often very long and arranged in stellate groups. These crystals are permanent in the air, and retain their transparency when thoroughly dried by a moderate heat. At a temperature above 200° F., they become opaque and white. In water, they instantly become opaque, retaining their form more or less completely. The water reddens litmus paper; and when heated in a concavity in a glass slide, covered by a slip of glass moistened with a solution of nitrate of silver, a white cloud appears in the silver solution, which is insoluble in nitric acid, but instantly disappears on adding an excess of ammonia. This reaction proves that the rhomboids contain hydrochloric acid in combination. They are readily soluble in acetic or hydrochloric acid.

Experiment 5.—In strong hydrochloric acid, the dumb-bells dissolve readily. By spontaneous evaporation, many transparent rhomboidal tables, often in groups, are deposited; resembling those from dilute hydrochloric acid, and polarizing powerfully. There are also a few octohedra, which do not act on polarized light; and some small zeolitic bodies. These are mostly circular, and have the same characters as those deposited from the solution in acetic acid.

Experiment 6.—The dumb-bells, placed in a cold saturated solution of carbonate of soda (covered to prevent evaporation), gradually become opaque, and in a few hours disintegrated, while a white granular precipitate forms around them. The clear solution being poured off, and the precipitate washed with distilled water, to remove the remaining carbonate of soda, it dissolves with effervescence in dilute acetic acid, leaving a few partially decomposed dumb-bells. The acetic solution, neutralized by aqua ammoniæ, yields a white granular precipitate with oxalate of ammonia, proving the precipitate from the carbonate of soda solution to be carbonate of lime.

Experiment 7.—The carbonate of soda solution (Exp. 6) should contain the acid of the dumb-bells in combination with soda. Left to spontaneous evaporation, it affords small stellate and foliaceous groups of crystals, mixed with large isolated crystals of carbonate of soda. The whole deposit re-dissolves in water. Neutralized by nitric acid, the solution gives with nitrate of silver a white precipitate, soluble in ammonia and in nitric acid. This precipitate fails to give the characteristic reaction of oxalate of silver, which should fulminate faintly and be dispersed, when suddenly heated after thorough drying; but its quantity is too minute to render the trial satisfactory.

The small amount of the deposit in my possession was now exhausted. Experiments 1 and 2 prove that the dumb-bells consist of a salt of lime, convertible by a moderate heat into the carbonate, and of course by a high

heat into caustic lime. The other reactions indicate that the lime is combined either with oxalic acid, or an organic acid nearly related to it. Octohedra, and prisms which appear to be oxalate of lime, are obtained from the hydrochloric and acetic solutions. The manner in which the dumb-bells are first penetrated, and then dissolved by strong acetic acid (Experiment 3), suggests the idea that they may contain organic matter, either as a constituent of the compound (from which it is set free by acetic acid), or mechanically intermixed with the acicular crystals which make up the zeolitic group. The acid appeared to dissolve out the salt of lime, leaving an amorphous substance of great tenuity, and less readily attacked by it. The solution did not dry up completely when the zeolitic bodies were deposited, but remained viscid after being kept for twelve hours in a closed vessel with caustic lime. Groups of acicular crystals are very liable to retain some of the substances among which they are formed, and especially in crystallizing from the urine. I have obtained tufts of acicular crystals of phosphate of lime from urine, which, after careful washing, retained organic matter enough to blacken and evolve a strong odour when heated before the blowpipe. The quantity of the dumb-bells which I exposed to heat was very small, and no odour was perceived, nor any greater blackening than is usual with pure oxalate of lime. Some of the reactions obtained are not known as belonging to oxalate of lime, and I proceeded to make some comparative micro-chemical experiments with that substance.

V. *Chemical Reactions of Oxalate of Lime.*—Pure oxalate of lime was prepared by adding oxalate of ammonia to a solution of chloride of calcium, and washing the precipitate thoroughly.

Experiment 8.—Oxalate of lime dissolves in very small proportion in dilute acetic acid, which leaves on evaporation a minute granular deposit. In acetic acid containing thirty per cent. of glacial acid, it is more soluble, a few circular zeolitic bodies appearing on evaporation. Acid of thirty-nine per cent. slowly dissolves a considerable amount, and when evaporated rapidly by a moderate heat, leaves circular zeolitic bodies, showing the radiating striæ finely, and giving the characteristic coloured rings and dark cross in polarized light. The circles are generally fissured in a radial direction in one or two places, as if they had contained water or acid when formed, and had contracted on drying. They sometimes show two or three concentric layers, proving that these may be formed in a short time, even in a few minutes. The octohedral crystals of oxalate of lime which accompany the dumb-bells in the urinary deposit are slowly dissolved by strong acetic acid.

Experiment 9.—A solution of oxalate of lime in strong hydrochloric acid, evaporated rapidly, leaves an abundance of zeolitic forms like those from the acetic acid solution. By spontaneous evaporation it yields transparent rhomboidal plates, often in groups; small octohedra and four-sided prisms, which last are sometimes in rosettes, and numerous zeolitic forms. The rhomboids

and zeolitic groups polarize finely, the prisms less strongly, and the octohedra not at all. In water the prisms and octohedra, as well as the zeolitic bodies, remain unaltered. The rhomboidal crystals retain their transparency when thoroughly dried, but become white and opaque on exposure to a considerable heat. They are not deliquescent, as would be the case if any chloride of calcium were formed. In water they instantly become opaque and granular, but do not dissolve. Their angles become rounded, and minute octohedra gradually appear in the water around them. In nitric acid they dissolve readily, and nitrate of silver produces a white flocculent precipitate of chloride in the solution, proving that these crystals contain hydrochloric acid combined with oxalate of lime, the combination being so feeble that the addition of water is sufficient to break it up. The prisms and octohedra appear to be pure oxalate of lime. A solution of oxalate of lime in dilute hydrochloric acid leaves, on spontaneous evaporation, rhomboidal plates, octohedra, and prisms, but no zeolitic forms.

Experiment 10.—Pulverized oxalate of lime being added to a saturated solution of carbonate of soda, and allowed to stand four hours in the cold, the deposit, which had become semi-transparent and crystalline, was separated by a filter from the solution, and washed. Dilute acetic acid now dissolves more than one-half of it with active effervescence, the residue being undecomposed oxalate of lime. The filtered carbonate of soda solution, neutralized by nitric acid, gives with nitrate of silver an abundant white precipitate, readily soluble in nitric acid and in aqua ammoniæ. This precipitate, collected and dried, is dispersed with a faint report and a puff of smoke when suddenly heated on platinum foil. This is a characteristic reaction of oxalate of silver, and proves that a solution of carbonate of soda is able to decompose oxalate of lime without the aid of heat, giving rise to insoluble carbonate of lime and soluble oxalate of soda.

These experiments show that oxalate of lime, contrary to the usual statement, is soluble in strong acetic acid, and that it forms a crystalline compound with hydrochloric acid. When rapidly deposited from solution, it affords zeolitic forms similar to those obtained from the dumb-bells. By the slow evaporation of a strong solution, zeolitic groups mixed with crystals are deposited. A dilute solution, slowly evaporated, yields crystals only. These crystals resemble in appearance and in their reactions those obtained from the dumb-bells.

It is probable that many substances may assume the zeolitic form of crystallization, and even the dumb-bell variety of that form. Griffith, in his "Manual on the Blood and Urine," figures dumb-bells of oxalate of soda (Plate IV, Fig. 17), also imperfect dumb-bells of uric acid (Plate I, Fig. 12). I have similar forms of phosphate of lime from stale urine, of urate of magnesia and oxalurate of ammonia, which are evidently made up of radiating acicular crystals. The mere external shape is not to be regarded as charac-

teristic, unless the zeolitic structure is present also. Dr. Frick obtained forms similar to the dumb-bells by keeping rhomboidal crystals of uric acid in water for some time, but it does not appear that they acquired the radiated structure, or the polarizing action of the true dumb-bells. The well-known radiated spherical masses of carbonate of lime from the urine of the horse give the zeolitic rings and cross in polarized light. Phosphate of lime, dissolved in strong hydrochloric acid, affords, both by rapid and slow evaporation, circular zeolitic forms, having the characteristic structure and polarizing action. No isolated crystals are obtained from the hydrochloric solution of this salt. The typical zeolitic form is a spherical mass. Under what conditions the peculiar dumb-bell shape is assumed has not been ascertained. The concentric layers which I observed may not be present in all cases.

Since the preceding observations were made, I have seen, in the *London Medical Gazette* of Oct. 25th, 1850, a reply by Dr. Bird to Dr. Frick's article. In this paper, Dr. Bird gives the results of a few recent experiments on dumb-bells obtained from a patient whose urine deposited a large quantity of them, unmixed with other crystals. These experiments, in his opinion, render it probable that they consist of oxalurate of lime, a salt easily convertible into the oxalate; from which it differs only by containing the elements of urea in place of those of water. The following is an abstract of his reasons for this belief: 1st. In their peculiar action on polarized light, and their radiated structure, they present a close resemblance to the crystals of oxalurate of ammonia, while the octohedra of oxalate of lime have no polarizing power. 2d. Water in which dumb-bells were kept for ten days at a temperature which, in the day-time, seldom fell below 85° or 90° (Exp. B.), became turbid, and evolved a fetid ammoniacal odour. Some of the dumb-bells had disappeared, and large octohedra of oxalate of lime, which did not exist previously, were visible. This putrefactive change, with evolution of ammonia, indicates the presence of nitrogen. 3d. The dumb-bells became black, and evolved an odour of burnt horn, when heated in a platinum spoon (Exp. D.), and at a moderate red heat became white. 4th. A solution of the dumb-bells in dilute hydrochloric acid was treated by ammonia (Exp. C.), which produced an amorphous white precipitate. On leaving the whole to spontaneous evaporation, large cubes of sal-ammoniac were obtained, and none of the usual plumose crystals. The cubic form is that assumed by this salt in the presence of urea. 5th. Boiled in strong nitric acid (Exp. F.), the dumb-bells dissolved, and on spontaneous evaporation, large and perfect dumb-bells were deposited from the solution.

In regard to Dr. Bird's argument from the crystalline form, and polarizing action of the dumb-bells, I have shown that oxalate of lime and other salts can be obtained in various zeolitic forms, of which the dumb-bell is one variety. Though the octohedra of oxalate of lime do not act on polarized light, the prismatic crystals of this salt which abound in various plants possess strong

polarizing power. These crystals (known to the botanist under the name of *raphides*) are classed under three general forms, specimens of each of which I have examined in this connection: 1st. Isolated four-sided prisms, usually and perhaps always rhomboidal; 2d, stellate groups of prisms; 3d, acicular crystals, either isolated or in bunches. Isolated prisms from the bark of common hickory, of two species of oak, and of the grape-vine, become strongly coloured in polarized light, and in some positions show concentric coloured bands parallel to the edges of the crystal. Similar crystals occur in the cells of the outer coats of the onion. In a single specimen, I found mixed with the prisms groups of radiated acicular crystals and true zeolitic forms, which gave the characteristic coloured rings and dark cross in polarized light. Whether these bodies consist of oxalate of lime or some other salt, I am unable to say. They have a yellowish colour and show radiating lines distinctly, by which they are readily distinguished from starch granules, which also exhibit a dark cross in polarized light. The stellate groups or rosettes which abound in rhubarb root polarize finely, the projecting faces of the crystals showing coloured bands parallel to the edges. In the pulp of the fig, similar groups of crystals occur, which have the same characters. Acicular raphides from the pith of the grape-vine, and those found in the outer coats of the hyacinth bulb, also in the stem and roots, show fine colours in polarized light. They appear to be very long and slender four-sided prisms. The prismatic crystals obtained by evaporating a solution of the dumb-bells or of oxalate of lime in acids, agree in appearance and polarizing action with those from plants. Octohedra of oxalate of lime sometimes occur in plants. I regard the dumb-bells as made up of very slender prisms, and not of lengthened octohedra, as Dr. Bird supposed.

Dr. Bird's experiments B. and D. indicate the presence of organic matter containing nitrogen, but do not show whether it forms a chemical constituent of the salt of lime, or is mechanically mixed with it. The resolution of the dumb-bells into octohedra of oxalate of lime, observed in Exp. B., may be a re-crystallization of the salt, with separation of the organic matter, or the acid may be decomposed. In Bowman's "Medical Chemistry," it is stated that the dumb-bells are gradually converted into octohedra, if kept for a length of time in any liquid medium. In my fifth experiment, octohedra were deposited from the hydrochloric solution of the dumb-bells. Exp. C. favours Dr. Bird's opinion that the elements of urea are present, but it cannot be regarded as conclusive. It is yet unknown whether sal-ammoniac may not assume the cubic form in presence of other organic substances besides urea. I repeated this experiment with some dumb-bells which had been mounted dry for preservation, and obtained plumose crystals of sal-ammoniac, and no cubes. It is possible that these dumb-bells might have undergone some alteration, as they were exposed to a heat of 200° or more in mounting, and had been kept some time since; but they retained their transparency and other characters.

A dilute solution of oxalurate of ammonia, added to one of chloride of cal-

cium, produces no immediate precipitate, but after some hours numerous zeolitic forms, probably of oxalurate of lime, are deposited. Among them are small dumb-bells, with radiating striæ, but the majority are circular. A part of the solution, left to spontaneous evaporation, deposited large cubes of sal-ammoniac mixed with zeolitic groups. The oxalurate of ammonia employed was not pure, and the zeolitic bodies are coloured, and more or less opaque, but some of them give the characteristic phenomena in polarized light. They are too impure and too small in amount for a satisfactory comparison of their reactions with those of the dumb-bells. Pure oxalurate of lime is stated to form brilliant and colourless crystals, sparingly soluble in water. The dumb-bells from urine are not attacked by water, unless macerated in it for a long time.

Dr. Bird concludes, from Exp. F., that the dumb-bells are not decomposed by boiling in strong nitric acid; but they might give this result if they consisted of oxalate of lime, or were converted into that salt by the nitric acid. A solution of oxalate of lime in strong nitric acid affords fine zeolitic forms by rapid evaporation. If these are re-dissolved in strong acid, and the solution boiled and evaporated, they are again deposited with the same characters. The residue is not deliquescent, as would be the case if any nitrate of lime were formed.

The preceding observations prove that the dumb-bells consist of a salt of lime, containing either oxalic, oxaluric, or perhaps some other organic acid easily converted into the oxalic; but the exact nature of the acid remains to be determined by future investigation.

ART. IV.—*On some of the Remote Effects of Injuries of Nerves.* By CHARLES W. PARSONS, M. D.* [Read before the Rhode Island Medical Society, Providence, December 18th, 1850.]

A SOMEWHAT peculiar case, which fell under my notice during the present year, first led me to make inquiries into similar facts; and I will begin by relating it in detail, and afterwards give an account of other cases which seem to be allied to it. No apology can be required for minuteness in the report of a case. Every one of you probably has been disappointed by finding that only those parts of a medical observation were recorded which the writer's own theoretical views made important, to the neglect of points which would be most essential in answering a hundred different questions that would first occur to other minds.

* The writer would be very sorry to have it thought that he offers this article as a complete essay on the subject. The hasty notice of many topics, and some peculiarities in its style, may be excused by the fact that it was intended to be read before a Society, and is published only in accordance with a special vote requesting it.

A young woman employed in a factory, aged 17, large for her age, of nervous temperament, had been rather delicate in health. She had convulsive attacks in childhood; and no serious sickness since. The catamenia were never regularly established till two or three months before the following narrative begins.

On Sunday evening, February 17th, 1850, she thrust the point of a pair of scissors into the left thumb, on the radial side, just over the root of the first bone of the thumb. The wound was slight, and caused little bleeding, but severe pain. She nearly fainted away. Some *salve* was applied, and the wound healed in a few days, but some pain and swelling remained about the thumb. She used cold emollient poultices, till on Saturday morning, the 23d, she put on warm fomentations of wild indigo, at the recommendation of an old woman. That day she had for the first time pain and swelling up the arm. About this time she had some pain in the back of the head and neck. She could not raise the thumb; it lay bent over into the palm of the hand. About March 1st, her catamenia appeared, and she was attacked, a few days after, with a "nervous fever." During this sickness, she was first visited, by one of our Fellows, Dr. J. N. Millar, of Fruit-hill. The catamenia lasted only two or three days; during the fever she had headache, but did not complain of any pain in the spine, and had no convulsions; her pulse was exceedingly rapid; she slept well at night. The thumb was swollen and painful about its root; she gained in the power of moving it; there was no open wound. In about two weeks she was convalescent from the fever.

Just as her appetite became restored, she one day saw her mother sit down on a basin of water which was in a chair, and she burst out laughing. The laughing became uncontrollable, and during the day gradually changed to a dry barking cough. This cough continued more or less constant for several weeks. She slept a good deal on some nights, and went through some days in comparative quiet; but at times she had very severe attacks, more severe than hard paroxysms of hooping-cough. After about two weeks, she coughed up green and yellow mucus, and sometimes blood. The thorax and spine became tender to pressure.

I saw her with Dr. Millar, March 31st, and will give my notes of that date. She was able to sit up in bed about half an hour, was cheerful, cheeks flushed, not at all livid. Slept well, last night, under large doses of hyoscyamus. Her cough, while I was there, was almost incessant. One inspiration was followed by from two to seven dry jerking expiratory sounds, reminding one a little of a small dog or frog. Respiratory sounds vesicular, clear and pure, on a hasty examination over the back. Percussion resonant. Respirations 20, pulse 100 in the minute. During the quiet produced by chloroform, the pulse went down to 80. Tongue red, clean, rough. Appetite at times pretty good. Bowels regular. Catamenia have gone through their regular course once since the fever.

Cicatrix on thumb red, a little prominent, like a half pea, very sensitive.

She cries out when I press its centre. Tenderness extends round the thenar eminence; and over metacarpal bone to the wrist. No tenderness, pain, nor red or hard lines up the arm. She cannot abduct the thumb.

Treatment had been very various. Opiates in very large doses had not much effect. Cupping over cervical and upper dorsal vertebræ allayed the cough for a time, but lost its effect by repetition. Inhalations of ether and chloroform stopped the cough while insensibility lasted, and no longer. Carbonate of iron, oxide of zinc, slight mercurialization had no marked effect. A dose of turpentine with castor oil was followed by unusual quiet for a time; a second dose had no obvious effect.

We gave her chloroform; after inhaling about ʒij, she became insensible and still. The cicatrix was then thoroughly cut out, and emollient poultices were applied. Next day she had pain running up to the spine; she had had a quiet night, using large doses of hyoscyamus. This operation had no immediate effect on the cough.

Four weeks after, April 28th, her cough had been growing less incessant and violent; she could converse some, though frequently interrupted; she raised thin serous sputa, bloody mucus, and almost every day some blood. Tenderness of thorax continued. The wound of the operation had healed soon; the cicatrix was not tender, and projected very little. She had used opiates more freely, and become costive; but her appetite was still good.

In a few weeks after this, after using quinine pretty freely, she felt able to leave her chamber, and rapidly improved after changing air. I saw her June 1st; she was able to walk out to the neighbors'; in ten minutes' conversation, she had about six turns of the noisy expiration; they are more frequent after fatigue or mental excitement. She continued to improve, with no marked advantage from treatment, except from change of air and scene and mode of living.

Some time in October, a relapse occurred, of which I cannot give the early history. She had, as before, very severe turns of noisy cough, with scanty mucous and bloody sputa. This lasted three or four weeks. The manner in which it ended is worth noticing; as it looks as if nature attempted a cure by a process resembling that which has sometimes succeeded in the hands of surgeons.

At a time when she had a very severe spasmodic cough, she noticed a soreness in the cicatrix on her thumb; a blister soon rose there, the tenderness and inflammation extended, and soon a dry slough formed, including the original scar. This became black and hard, and peeled out as in some cases of senile gangrene, with no liquid discharge beneath. When this soreness began to attract her notice, her cough was mending a little; but soon after, as the slough separated itself, her cough ceased, and has not troubled her since. She gained rapidly in health. Two days since she had gone to work in the factory, and had nearly gained her usual strength. The thumb pre-

sented a cicatrix, flat, a little red, say an inch long and half an inch wide, with a slightly tender knob at one corner. No tenderness running up the arm. She cannot abduct the thumb; all its other movements are perfect. The hand is colder than the other one.

It is, I think, quite clear that this cough did not proceed from inflammation of the air-passages, and that the discharge of different liquids from the mucous membranes was a secondary result of the convulsions. The cough, as I heard it, was evidently spasmodic, and answered to the description given of *uterine*, or hysterical cough. Sir Charles Bell has described very similar cases, in one of which several physicians spoke for a chance to examine the ulcerations of the larynx after death, but the patient disappointed them by getting well. In another, he was called on to perform laryngotomy. In one nervous young lady, his description is, "a convulsive barking noise like a cough, except that the larynx was alone affected; and there was no conforming action in the pharynx, velum, and lips."

Again, it seems certain that the wound had some agency in causing the symptoms, by an impression of some kind sent up the nerves of the arm. The part wounded certainly contained terminal nervous fibres, which could send an impression to the brain, though unfortunately I cannot say whether any nervous trunk was injured. A branch of the radial nerve was just in the way of the scissors; and we may infer that it was injured, from the immediate pain and subsequent paralysis.

A variety of remarkable symptoms have been found to be produced by injuries of nerves. There is no need of illustrating the effects on those parts to which the injured nerves run. As an ordinary thing, any lesion of a nervous trunk is felt in the parts supplied by it. But the *remote* effects, those which run *up* the course of the nerve, or radiate in *collateral* directions, are less familiar. They consist in disorders of sensation and disorders of motion.

Pain is the most frequent symptom. Very acute pain usually accompanies the injury at the time, and when this immediately follows bleeding, or any wound that is likely to involve a nervous fibre, it should put us on our guard. This very frequently subsides entirely, leaving perhaps some sensitiveness of the part; but either before or after the wound is healed, it returns, shooting up the part, in some instances seating itself along the spine, and in some also running in different distinct directions. It is very often intermittent, recurring sometimes at pretty regular periods, and often in the torturing paroxysms of neuralgia. The fits are apt to be worse at night, and in cold and damp weather. There are very commonly other unpleasant sensations, particularly tenderness on and about the wound or cicatrix, and numb or tingling feelings, running up from this part along the nervous trunks. In one case, besides severe pain in the wounded hand, increased toward evening and in the night, there was extreme tenderness, a feeling of pins and needles in the hands and fingers, most marked in the forefinger and thumb, with pain shooting up the arm,

numbness, and feeling of deadness. This was after a prick of the ball of the thumb in a rather hysterical Irish girl of twenty. The symptoms were believed by the very intelligent surgeon who attended her to be caused by the injury.*

I know a lady of this city who many years ago pricked the thumb near the nail with a needle. Severe symptoms very soon ensued, which confined her a few days to the bed, and seemed to threaten tetanus. Since then, the part has always been extremely sensitive. Picking up a needle with the thumb and forefinger of that hand causes an instant painful thrill running up the arm.

An American girl, rather nervous and delicate, but enjoying tolerable health, three years ago, at the age of about eighteen, thrust a needle into the palm of the right hand a little below the pisiform bone. A piece of the needle nearly an inch long broke off, and was extracted with much difficulty, the surgeon having to work an hour over it. In a day or two, she had pain and swelling of the arm. It was red; whether in streaks or not is uncertain. Pain in axilla; it is not known whether the axillary glands were swelled. Inability to move the arm; she carried it bent, and applied against the chest. In some five or six days the swelling subsided, but not the pain. She had then an attack of erysipelas on the right side of the face, not down the neck. As this passed off, more than a fortnight after the injury, she had trismus and stiffness of the neck; could not open the mouth for about twenty-four hours. Some stiffness remained for a longer time. Her pains became more severe, and extended up the ulnar side of the arm to the right axilla, and thence crossed, both below and above the mammary gland, to the region of the heart. These pains returned daily, and were very severe. She has had some ever since. Is subject at times to palpitation of the heart. The fingers at times are sore and swollen. For about six months after the injury she was confined much of the time to her bed. Toward the close of this period, numbness in the arm also came on, and some paralysis of the face, so that the features were drawn to one side. Her pains are worse when her general health is impaired; they are increased or brought on by fatigue; but rather relieved by mental occupation and pleasant excitements. Her health has been gradually improving, and the neuralgia growing less severe; within six months there has been a great amendment. She has been treated by mesmerism, homœopathy, electricity, &c., but the improvement seems to have been gradual, and uninfluenced by remedies.†

In an instance related by Swan, after a cut on the thumb, there were numb feelings and feelings of "fullness" up the arm for about two weeks. After

* Article on some Effects resulting from Wounds of Nerves, by John Hamilton, *Dublin Jour. Med. Science*, March, 1838.

† These facts are taken from the statements of herself and her friends; the dates are of course uncertain. I am indebted for the facts to the kindness of Dr. James W. C. Ely, of Providence.

the wound had healed, pains came on, which extended over the whole body, especially the upper part, in severe paroxysms, with trembling, but no muscular spasm. The pain was sometimes compared to pinching with hot iron, or hot water poured down the back. After seven years, a gradual improvement had gone on, little influenced, it would seem, by remedies; but there was still an extreme susceptibility. Carrying an umbrella two hours caused a feeling of needles in the hand, pain at the stomach, and headache, lasting a few days.*

Giddiness, temporary loss of sight, nausea, and vomiting, feeling of the teeth being set on edge, have been found to accompany acute pain, following wounds of the upper extremity. The same sympathy of other sensitive nerves with the painful attacks is seen in neuralgia unconnected with injury.

Next in frequency to pain, convulsions of various sorts have been observed, apparently produced by wounds of nerves. The most familiar instances are the twitchings after amputation. When they begin after the wound has nearly or quite healed, these sometimes depend on some nervous fibres being involved in the cicatrix. They have been thought to be worst in operations which left the nerves less perfectly covered, as in the conical stump. In some other cases, convulsions confined to the nerve which had been mechanically irritated have been fatal. In a recent case of Bransby Cooper, ligature of the subclavian artery was followed by severe incessant hacking cough, and in a few days by death. The phrenic nerve was found to be inflamed.

In other instances, the whole injured limb has suffered a great while and very seriously from convulsions, which have made the person's life miserable. In others, the whole body has been affected; and in others again, some particular set of muscles remote from the injured part. I have before me accounts of each of these forms of disease, drawn from journals and from Morgagni's store-house of accurate observations. The treatises of Swan, in England, and Descot of Paris, on local affections of the nerves, are rich in similar narratives.

A young lady was accidentally wounded a little above the wrist, near the radial nerve; and acute pain ensued, which continued with little abatement, extending to the forearm, fingers, and at last up the arm. Convulsive movements then came on in the arm, which resisted the greatest variety of treatment, till three applications of the actual cautery to the scar produced a slough, and complete relief was obtained. She continued well.† Art here accomplished what nature seems to have done in the case I first related in full.

Morgagni tells us of a "noble virgin of Verona," about sixteen years old, who was bitten by a sparrow, on the forefinger. The finger became bent and partly palsied; suppurated, and she had then a fever of some days' length.

* Swan, Dissertation on the Treatment of Morbid Local Affections of Nerves, London, 1820.

† Quoted in Johnson's Med.-Chirurg. Rev., April, 1827, p. 427.

After these symptoms had been removed, a fortnight after the wound, "a sudden tremor, which began first in her feet, and then in her hands, and was from thence propagated through the whole of her body, seized upon the virgin, and brought with it a dangerous and long syncope; on the going off of which, her tremors did not for that reason go off; but, being joined with a groaning, and sometimes with a kind of howling, continued many hours." Attacks like these returned frequently, sixteen or twenty times a day. Whether these attacks, which seem to have been hysterical, were any way connected with the wound may be questioned. Morgagni believed they were; and the history resembles in many points the observation which I related in commencing.

In both the original wound was a puncture, in nearly the same place, over the radial nerve or one of its branches, and healed soon; in both the part was palsied for a time, and then fever ensued. Both patients were of nervous make, and had some catamenial irregularity. Both had some singular affection of the respiratory muscles, the howling and groaning of the one reminding us of the other's barking and croaking.*

When a single set of muscles, distant from the injured part, is the seat of convulsions, the respiratory muscles seem to suffer oftener than any other. An interesting case is reported at length in a late number of the *American Journal of Medical Sciences*.† A young married woman, after pricking her thumb under the nail, had pain and spasm running up to the face and neck; afterward hysterical symptoms, connected probably with the commencement of gestation; and ten months after the injury she gave birth to a dead child, after which she suffered from various wandering painful affections, simulating inflammation. With the earliest attack of this kind, she had "a cough which sounded like the barking of a small dog, of a highly croupy character, without expectoration." As these troubles dated from the time of the trifling injury, we may suppose that this immediately excited the symptoms to which her temperament, and the agreeable stage of family history through which she was passing, made her particularly liable. Such was the opinion of the distinguished physician who had charge of her.

In still another class of cases, the whole spinal cord seems to have been involved, producing affections much more deserving of the name *spinal irritation* than many of those odd hysterical cases where all sorts of bad feelings in the body, accompanied by tenderness in the integuments supplied by the posterior spinal nerves, are very conveniently ascribed to this scapegoat of nervous pathology. *Tetanus* is more frequently caused by the impression made on the system by the reparative efforts of tissues of low vitality, as tendons. But tetanus has in many instances followed wounds of the larger nerves; and in some, related by Larrey and others, the disease was cured by removing the wounded part. Bécларd mentions one where the artery that

* Morgagni, on the Seats and Causes of Diseases, &c. Letter LIV.

† October, 1849, reported by Dr. S. P. Hildreth.

accompanies the ischiatic nerve was tied after an amputation. When the wound had nearly healed, fatal tetanus commenced. The sciatic nerve presented at the stump a considerable swelling, containing in its substance a knot of ligature.

Epilepsy has sometimes been cured by removing tumours which pressed on nerves. In one case, the fits were preceded by peculiar feelings running up from the calf of the leg, and a scalpel thrust in two inches deep was so lucky as to hit a body of the size of a pea, as hard as cartilage. This was cut out from among the muscles, and the attacks ceased. Sometimes the *aura* of epilepsy has seemed to set out from a superficial tumour, resembling a cicatrix, which was tender or painful, and on removing which the disease was cured.

I have recently met with the case of a soldier in our Mexican army who had a bullet-wound at the battle of Molino del Rey. The bullet lodged; ten months after this, he had a fit of epilepsy, and for three months after had them every two or three weeks. Dr. Kimball, of Lowell, Massachusetts, cut down and extracted the bullet, which lay "near to, if not in contact with, the sciatic nerve;" close to the ischiatic notch. Up to three months after the operation, when Dr. Kimball reported the case, no fit had occurred.*

It would appear, from a large number of scattered facts, of which I have only given a few specimens, that wounds of nerves sometimes are followed by convulsive movements, either in the very part that is hurt—or in particular parts of the muscular system distant from the injury, particularly the muscles of respiration—or involving the whole frame. These convulsions sometimes appear while the wound remains open too long and inflames, sometimes after it has healed. They are sometimes accompanied by fits of pain, at other times not so. Irritative fever, and the various symptoms of hysteria, occur, in many cases, between the time of injury and the appearance of convulsions. The part often becomes partially paralyzed. The spasms are frequently made worse by cold and damp, and cease during sleep.

A large proportion of these various cases have been in young females, and persons said to be nervous, or hysterical. Yet some occurred in the stronger sex; and a good many of these curious observations are furnished by Baron Larrey, from the battle-ground and camp. Undoubtedly some unknown cause, in the person's previous state, conspires to produce them, or they would not be so rare. Some persons have taken the trouble to try to *prove* that these effects are rare. To show this, they have laid bare and isolated the nerves in living dogs, and then pinched, pulled, cut, torn, and burnt them. It is found that injuries of nerves in inferior animals seldom produce the secondary nervous symptoms we have been describing. But this only illustrates what we all know, that the constitutional symptoms of local injury and reparation are generally less severe in these animals than in man. If

* See Boston Medical and Surgical Journal, Feb. 14, 1849.

such experiments are meant to prove that, in man, nerves are hurt much more frequently than remote convulsive or neuralgic affections are produced, they are at once needless and insufficient.

The wounds to which these consequences have been ascribed were most commonly punctured. After some incised and gunshot wounds, a nerve has been found to be partially divided. This would put the undivided fibres on the stretch, as may be easily shown by experiment. If a nerve be first partly cut across, the fibres will retract but little; on then dividing it completely, the retraction will be immediate and very considerable. Fatal tetanus was caused in one instance by caustic, which the patient applied himself; the nerve beneath (musculo-cutaneous of the arm) was found red and softened for some inches. Foreign bodies in the substance or immediate neighbourhood of nerves—as fragments of bullets, the knot of a surgeon's ligature, the end of a whip-cord, a stick thrust through a hollow tooth—have caused both the painful and convulsive paroxysms. The decayed stumps of teeth act in the same way.

Bleeding at the bend of the arm has sometimes been followed by immediate acute pain, and at a later period by habitual neuralgia or spasmodic attacks. The ill consequences of the wound of venesection most noticed have been the local inflammatory symptoms—particularly inflammation of the cellular tissue, absorbents, veins, and of the fascia connected with the biceps tendon. Some old surgeons, as Benjamin Bell, dwell a good deal on these local inflammations, and seem to confound those of different tissues together. These are all distinct from the nervous affections we are describing, though occasionally combined with them. When the wound of venesection does not heal soon, inflammation ensues in a few days. If the fibres of a nerve are involved, pain runs up the limb, with tenderness. Leeches and cooling lotions have been found to relieve such cases, which are undoubtedly inflammation of the nerve. [See cases related by Swan.]

It is not necessary to point out the analogy between these cases and neuralgia. Those where pain was the chief symptom are merely instances of neuralgia from a probable local cause. The convulsive attacks are quite analogous to those caused by the irritation of teething, and other forms of what Marshall Hall would style eccentric convulsions. They are on some accounts good cases for study, as they throw light on those more obscure instances where the exciting cause is some previous derangement in the bodily functions instead of a visible outward injury. One other disease resembles these facts somewhat. I mean neuroma, or the painful subcutaneous tumour. We have seen that painful and convulsive turns often come on after the wound of a nerve has healed, the scar remaining tender and painful, and appearing to be the centre from which the attacks radiate. Some cases of neuroma seem to have originated in this way. One of the most distressing on record was ascribed to the prick of an awl. These tumours are also much more frequent on exposed parts. But they do not commonly have the struc-

ture of a cicatrix. Most frequently there is a fibrous cyst of small size, containing a firm body, seated near or in the substance of a superficial nerve, and causing, as its chief symptom, intense, intermittent, radiating pain.

I have not sufficient materials to judge of the prognosis in these cases. Mr. Hamilton, of Dublin, says, after relating a number of interesting facts, "All the symptoms, uninfluenced by every remedy made use of, have gradually declined after a long interval, having apparently undergone a natural cure; but in a few instances the termination has been fatal." From the reports I have succeeded in bringing together, it appears that these affections, like many others that begin in irritation, take mainly their own course, and generally tend toward recovery, if placed under good hygienic influences. The painful paroxysms are more frequently rebellious to treatment than the convulsions.

By far the most important remedy for these affections is to cut off the communication between the wounded part and the nervous centres. The wound or cicatrix may be cut out, or destroyed by cauterization; the member may be amputated; the nerve may be cut across just above the part injured, or at a distance above this spot, or a part of the nervous trunk may be laid bare and excised. These operations, if performed early, before the irritation extends far, very frequently give relief; but if delayed till the wound has healed, and secondary symptoms have come on, the result is very much less certain. Mr. Mayo, a surgeon of great experience, says that neuralgic pains, immediately succeeding a wound, may be arrested by dividing the wounded nerve above the part injured; but if they commence after the cicatrization of the wound, the chance is that the disease excited in the nerve has extended too far to be relieved by that operation. A number of cases have come under my notice where an operation has relieved pains or spasms months or years after they commenced. The relief has sometimes been instantaneous, at other times more gradual, but in many cases was evidently procured by the operation. I have before me the account of a man who was wounded in the leg by a musket-ball, and eighteen days later, after the wound had healed, began to have some degree of paralysis, with fearful convulsions of the whole body, at intervals. About eight years after the first attack, having been subject to these tormenting paroxysms daily for the greater part of the time, he had a piece of the external popliteal nerve, about two inches in length, cut out, and in a few hours he felt a total change, was composed and tranquil, continued free from the sweatings, palpitations, startings, and shudders he had had before, and in eight years after had only six or seven much milder attacks.* This is a remarkable instance of an irritation causing disturbance of almost all the nervous functions, and yet, after eight years' continuance, so much dependent on the local lesion as to be substantially cured by destroying the connection between the part and the nervous centres.

* From Descot's *Dissertation sur les Affections Locales des Nerfs*, Paris, 1825. Quoted in Johnson's *Med.-Chir. Rev.*, April 1827.

A lady in this city, many years ago, cut across the end of the forefinger with a sharp knife; the wound did not heal for many days, and some swelling and inflammation followed. About a fortnight after the accident, pains began, which ran up the arm to the shoulder and region of the brachial plexus. After suffering some years in this way, and trying many remedies with no good effect, under the direction of a distinguished Fellow of this Society, now deceased, she had the finger cut across on its palmar surface to the bone. Dr. John C. Warren, who operated, was very far from strongly advising it, and by no means sanguine that any permanent relief would follow. It proved so, however. The last joint of the finger remains a little crooked, the power of using it is impaired; but the pains in the arm, and pricking and tingling in the hand soon disappeared.

Traumatic tetanus has sometimes been cured by removing the wound, or dividing a nerve that was injured. Larrey has furnished several remarkable cases of this kind; and I have just met with a similar fact in the *Dublin Journal of Medical Science*, for August, 1850; and with two reported by an Italian surgeon. In the first-named one, tetanus set in twelve days after a very severe contusion, which left exposed about three inches of the posterior tibial nerve. Next day the symptoms were increasing. Mr. Bransby Cooper then amputated the limb, and the tetanus entirely disappeared. The man died, just a fortnight after, of diffuse inflammation of the cellular tissue.

In the more chronic affections which form the principal subject of this paper, it seems to me that an operation should be advised, when milder measures do not succeed, and there is reason to suppose that an injured nerve, or wound of a part well supplied with nerves, is the cause. But, if there be no tenderness or pain in that part, and no swollen cicatrix, if the fits seem to begin from other parts of the body as well as this, there is more reason to expect harm than good from operating. Such is the recommendation of Pearson and Swan; and such would be my own conclusion from examining a large number of recorded cases.

Since writing the above, I have seen a notice of Dieffenbach's Operative Surgery, in the *British and Foreign Medical Review*, for April, 1846, which states that this eminent practical surgeon takes "a very unfavourable view of the operation under any circumstances. One case of the author, however," it proceeds, "is interesting; very severe neuralgia had followed venesection; the injured nerve was divided, with instant effect, the pains, which had continued for a month, immediately ceasing. A similar case is quoted from Hirsch, in which convulsions and coma accompanied local neuralgia, which were removed by two deep incisions over the wound. But, whether for relief of neuralgia or tetanus, or for any other cause, success is rare; and 'surgery is here under the greatest obligation to physiology for pointing out that the sanguinary path is not the right one.'" This, I would respectfully suggest, is a question for experience, and not for physiology to answer.

The modes of cutting off connection between the injured part and nervous centres will differ in different cases. Mere incision carried across the nerve succeeds sometimes, though the affection may be expected to return in a few weeks. We have just mentioned a case where the relief was permanent. Excision of a piece of nerve sometimes gives only temporary ease. In a boy, near Boston, many years ago, "a portion" of the anterior tibial nerve was cut out, for a most distressing neuralgia caused by injury; how large a portion, I cannot tell; the pains returned some months after. It is impossible to say in a general way how large the interval between the divided ends must be to prevent their reuniting. Ollivier states it at about one inch; but it will of course vary with circumstances.

Decidedly the best results have been obtained by cauterization, which most thoroughly prevents the nervous fibres from reuniting. Larrey employed the hot iron, at a white heat, in many cases of tetanus coming on soon after injury, and with good success. I have before related one remarkable cure of a chronic convulsive affection by the actual cautery.

Benjamin Bell proposed that, in cases of spasm following soon after venesection, the soft parts be very freely and extensively divided down to the bone. His advice, I suspect, has seldom been followed, in a part like the bend of the elbow, where the nerve wounded is usually subcutaneous, while there are large nerves and arteries beneath.

Compression, as by the tourniquet, has sometimes proved very useful as a palliative, actually preventing paroxysms which seemed just coming on. The machines for making more exact pressure on nerves, which were contrived to prevent pain in surgical operations before the days of ether, might be introduced again for the present purpose. The bearing of these facts on the question of a nervous fluid is worth noticing.

The only cases where I have known leeches to be useful are those before alluded to, where a wound remains open, inflames, and is then followed by pain up the limb. In some such cases, the local antiphlogistic course has acted like a charm. Rest is of the highest importance in these instances; motion of the part tending to prevent the wound from healing, and to provoke inflammation. The choice between cooling lotions and warm fomentations must be determined by trial. I should also be induced to follow this local antiphlogistic course, whenever there was tenderness of the cicatrix and up along the course of the nerves.

In one case of long standing, Dr. John C. Warren advised steady, continued dropping of warm water. Rubefacients, as in ordinary neuralgia, are often useful, but by no means reliable. The older surgeons made great use of oily and balsamic applications. We find so sensible a practitioner as Ambrose Paré applying basilicon to a puncture of venesection, followed by acute pain, *for fear the wound should unite*, and afterwards using oil of turpentine, with rectified brandy, and if these should not suffice, proposing to apply boiling oil.

Of other treatment I have very little to say. It should be conducted on the same principles as that of similar affections, neuralgia or spasm, with no known local cause. I suppose the most important points are, to get the patient to breathe as much fresh air as possible, to direct good and nutritious diet, to prevent excitement or fatigues of the mind, to encourage and soothe, without a parade of sympathy, to obviate any functional disturbances, particularly menstrual, and to give tonics as they can be borne, with anodynes only as they are absolutely required. General cold bathing I have known very useful in one severe case in this city. Mercury has sometimes allayed the local inflammatory symptoms, but no more.

The only point of general treatment on which I could have hoped to say anything new is the use of ether or chloroform. In the one case I have reported at length, chloroform completely quieted the spasms, but only for the time. Natural sleep also prevented their return. I have not known a single case of neuralgia, distinctly traceable to injury, which was benefited more than temporarily by these agents. But in other cases of this affection, they have often been useful, not only by procuring an interval of ease, but by putting a stop to the paroxysm. I have more than once seen severe tic douloureux pass off under the influence of chloroform inhaled, and then keep off. Its external use seems to me particularly worth following up. Though not so certain as some remedies, it sometimes acts with surprising quickness and completeness. The union of morphia with it, as practised by the late Dr. J. D. Fisher, increases the probability of permanent good. I have lately known a solution of sulph. morph. gr. x, in chloroform ℥j, as recommended by him, rubbed and laid on the part, to relieve immediately and perfectly severe shooting pains up the arm connected with an irritable ulcer on the finger.* The inhalation of ether in tetanus was tried with sanguine hopes. It has sometimes relieved the spasms and appeared to save life, at other times it has increased them. Its influence on those healthy muscular contractions, like the uterine efforts which depend on the spinal cord as their ganglionic centre, is not uniform; and the causes of this variety are ill understood. These agents have but just begun to show their powers, and experience is as yet various and contradictory on many points, which will at some future time be cleared up. Certainly, however, a mode of treatment which has succeeded in some dozen or score of well-reported cases of tetanus in three or four years fairly deserves to be tried.

This subject is one of scientific, quite as much as practical interest. Yet, though some of us may never meet with facts exactly similar to those we have been considering, it is well for us to be reminded of the rarer forms that disease assumes. The mode in which the system reacts against disturbing causes varies so much in different constitutions as to make an inexhaustible

* M. Dévergie recommends frictions with an ointment chiefly composed of chloroform four parts, to thirty parts of lard. He mentions a case of facial neuralgia permanently cured apparently by inhalation of chloroform.

subject for study. A little puncture, or sudden excitement of feeling, aided by some peculiar impressibility which, perhaps, never showed itself before, may produce speedy death. On the other hand, men have recovered after having the thorax skewered by the shaft of a chaise, or a tamping-iron shot through their brains. The remembrance of such facts will keep us from too great confidence in prognosis—an error which is as easily perceived, and perhaps does a physician as much harm, as any mistake in the actual management of a case.

One other topic suggests itself here. The public do not understand this uncertainty, which springs from the very nature of life. The physician, oftener the surgeon, is sometimes held answerable for a good result, as if he were dealing with mere machinery, governed by the laws of lifeless matter alone. Sometimes the trial by jury, which so many fine things have been said about, is turned into a mockery, that would be simply ridiculous, if it were not grossly arbitrary and unjust. A dozen men, wholly unused to observing disease, unacquainted with the laws even of health, unable to comprehend the difficulties of the subject, bound by the strong ties of caste to bear hard on the professional man, leagued by common ignorance and prejudices and jealousy with the natural bone-setter or Indian doctor who provoked the suit—these, too often, are the “intelligent and impartial” jury, who are to decide what the surgeon ought to have made nature do with a constitution no one knows how much impaired, under injuries whose consequences a Cooper or a Warren would not dare to foretell. This can only be remedied by the gradual spread of general intelligence and information, giving us better juries. But we can lessen the evil by resisting the temptation to run a race with quacks in confident promises. By such a course, we may see cases carried off by other men of more flippant tongues, more ignorant, or less honest. But we shall be less exposed to this unpleasant demonstrative instruction in forensic medicine, and we shall make our calling more truly respectable and useful.

ART. V.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, M. D., Secretary.

Sept. 9, 1850.—*On certain Phenomena connected with Etherization.*—Dr. SAMUEL KNEELAND read the following paper.—It is generally admitted that the condition of etherization is analogous to that of intoxication; the first symptoms being those of stimulation, the following those of narcotism.

The curious fact that sensibility may be destroyed while the intellect is active seems to find an explanation in the view of Dr. Carpenter, “that the

seat of pain, or tactile sensibility, is in the great cephalic ganglia, while the intellectual functions reside in the cerebral lobes."

Longet, from certain cases where, with the usual signs of pain, no pain has been suffered; in other words, where the pain has been *felt*, but not *perceived*, from the supposed affection of the *cerebral lobes* without the *ganglia*—has maintained that in these cases the *lobes* are first affected, contrary to Dr. Carpenter's opinion. These cases of imperfect etherization, as we now know they were, hardly justify his conclusions; for the signs of pain might be equally well considered as *reflex* actions depending on the still preserved integrity of the *true spinal marrow*, which does not appear to be etherized till after the *cerebro-spinal* system.

Flourens, one of the first experimenters on this subject, has given the following as the order in which the nervous system comes under the influence of ether: cerebral lobes, cerebellum, spinal marrow, lastly, the medulla oblongata. It is now evident, from the better understood phenomena, that this order must be somewhat changed, as follows: the cerebellum; cephalic ganglia; true spinal marrow; ganglia of special sense and cerebro-spinal system; and the cerebral lobes last of all—if indeed the latter can ever be fully etherized without fatal results.

M. Pappenheim, in experiments on the structure of nerves which had lost their functions under the influence of ether, says that a very slight alteration may destroy their function; the fluidity of the nervous mass diminishes, and the nerve shrinks and is separated from its sheath. This effect varies with the consistence of the sheath, and the fluidity and chemical nature of its contents. He also discovered that the peripheral fibrils of a nerve may lose their sensibility before the central ones. This may explain why the delicate nerves of the cerebral ganglia should lose their functions sooner than the grosser spinal nerves; in a word, why the functions of the nervous system should be *successively* abolished.

Ether enters the system both through the nerves and blood-vessels. Its influence conveyed by the pulmonary nerves unquestionably produces its primary stimulating effect; while its narcotic effects are produced through the blood-vessels of the lungs.

Flourens has noticed a curious phenomenon connected with ether, which he does not account for. He had proved that ether inhaled by the lungs destroyed sensation before motion; he afterwards found that ether injected into an artery, on the contrary, destroyed motion before sensation. It would not be supposed, *à priori*, that the same agent introduced into the blood at two different points would affect the nervous system in opposite manners. As the course of the circulation in the latter case is in the direction of the *motor* nervous influence, while in the former it is in the direction of the *sensitive* influence, perhaps the phenomena are in this way connected. The injection of ether into the *veins* produces the same effect as its inhalation.

Amussat and others maintain that the insensibility produced by ether and

chloroform depends on *asphyxia*, on insufficient oxygenation of the blood; and that this is proved by the change of the colour of the blood from bright arterial to dark venous, this change always preceding insensibility; though the change is so quickly reversed, that breathing pure air for a few seconds brings back the arterial colour. Ether has been supposed to cause asphyxia by obstructing the endosmosis of oxygen by the capillaries of the lungs to such an extent that an increased supply of oxygen with the ethereal vapour does not retard the period of insensibility. This opinion was strengthened by the fact that the same insensibility could be produced by other gases (not poisonous) improper for respiration, as carbonic acid, nitrogen, hydrogen, nitrous oxide, &c. But we know that the insensibility from ether is not due to a cessation of pulmonary hæmatisation, as an animal may be as quickly and as fully etherized by injecting ethereal vapour into the rectum, or ether into the circulation, the lungs being left perfectly free for the oxygenation of the blood. There is no necessary connection between the dark colour of the arterial blood and ethereal insensibility; if the blood be dark, and there be commencing asphyxia from deficiency of respired oxygen, it is not essential to, and indeed ought never to occur, in the process of etherization; for, though asphyxia be a sure way of causing insensibility, it is not the safe insensibility from ether or chloroform. It would seem that a comparison between the first applications of ether (when many accidents undoubtedly happened from partial asphyxia) and the present method (where a full supply of oxygen is secured) should be sufficient to show that ether has a special and *primitive* action upon the nervous centres, quite different from that produced by gases unfit for respiration; and that, if asphyxia sometimes occur, it is a complication and a *secondary* phenomenon.

Though asphyxia be the result of a deficiency of oxygen, or, what is here equivalent, an undue accumulation of carbon in the blood, there may be a condition, without deficiency of oxygen, and at the same time with an increased supply of carbon, which might be called asphyxia, and which might give a dark colour to the blood. Now, the first condition, asphyxia proper, is fulfilled by the irrespirable gases; the second by ether and chloroform, both of which are rich in carbon, and yet may be introduced to the nervous centres with properly oxygenated blood in the space of twenty seconds. The question here naturally arises, whether the peculiar effects of these agents do not spring from a chemical action of *carbon* on the fatty and albuminous constituents of the nervous tissues. The action of alcohol, also rich in carbon, would allow a similar explanation, viz., the action of *carbon* on a brain stimulated by properly *oxygenated* blood.* Similar effects would also be produced by a blood

* We know that, of two liquids containing an equal amount of alcohol, that one which contains the most carbonic acid possesses the most intoxicating properties. Compare, for instance, champagne and hock, each of which averages about 12 per cent. of alcohol; or fresh and stale ale. Even drinks containing no alcohol, but highly charged with carbonic acid, as the "soda-water" of the shops, produce not a little exhilaration in those unaccustomed to their use.

containing such an extra amount of *carbon* as to render it unfit for keeping up the activity of the cerebral circulation; so that ether might as effectually suspend the circulation through the brain as Sir Astley Cooper's experiment of tying both carotids, and then compressing the vertebral arteries; which produced in an animal immediate loss of sensation and motion, both coming on again when blood was re-admitted. With this view, there would be excess of carbon in the cerebral vessels, stagnation of their circulation, and consequent insensibility. In both cases, excess of *carbon* being the cause of anæsthesia.

Chloroform has been supposed to exercise its influence principally on the *blood*, while ether acts on the nervous tissue; chloroform by rendering the blood unfit for the stimulation of the brain, ether by rendering the brain incapable of excitation. Some of the deaths produced by chloroform have been ascribed to its causing air in the vessels; and in some of the autopsies, particularly of Madlle. Stock (whose case was the subject of Malgaigne's Report on Chloroform before the French Academy), air has been found very extensively in the vessels; but whether this was common atmospheric air, or carbonic acid, or some other gas from decomposition of the blood during life or after death, no examination seems to have decided. Chloroform has a marked chemical action on the blood, which might give rise to this great and sudden development of gas; carbonic acid exists normally in the blood; chloroform might disengage an abnormal and fatal quantity, or it might again assume a gaseous form itself in the vessels. Chloroform increases the quantity of the serum, thus accounting for the remarkable fluidity of the blood so often noticed, and diminishes and condenses the fibrin; hence, the poorer the blood, the more dangerous must be the consequences of its use. According to Guérin, the globules of the blood, brought into contact with chloroform, contract, lose their colour and form; little bubbles of air arise on their surface; and some of them entirely disappear.

It is generally admitted that chloroform is much more dangerous than ether; and it would be interesting to know upon what its fatal results depend. Asphyxia may be left out of the question. Does it act on the nervous tissue, or on the blood primarily? are its effects due to an instantaneous poisoning of the blood, as some have supposed? or does it paralyze the nervous substance? Does it cause the phenomenon of air in the heart and vessels, and is death caused by this lesion?

Dr. KNEELAND added that, on these and kindred questions, of great interest and importance, which naturally presented themselves, he should be glad to hear the opinions of gentlemen who had had greater experience in the use of anæsthetic agents.

With reference to this subject, Dr. JACKSON mentioned a case of etherization which proved fatal, in which there was a development of gas in the heart. Although the examination was made but a few hours after death, the signs of putrefaction were quite marked.

Dr. TOWNSEND thought that in many cases there was a spasm of the ves-

sels of the lungs, resembling asthma, produced by the first inhalation of ether, which might interfere with the proper oxygenation and decarbonization of the blood. Dr. T. had noticed, in some cases, a coating of saliva covering the surface of the sponge, which it was necessary to remove, as it prevented all access both of ether and of atmospheric air.

In answer to a question by Dr. HAYWARD, Dr. BETHUNE remarked that he had not found asphyxia so likely to follow the inhalation of *sulphuric* as of *chloric* ether.

Nov. 11.—*Sudden death from probable Chronic Disease of the Heart, combined with Œdema of the Lungs.* Dr. BOWDITCH reported the case.—The patient was a lady, forty years of age; active in mind and body; seven months advanced in pregnancy; formerly had had pulmonary difficulties; within the last year has had dyspnœa with palpitation. Some time since, after waltzing, had palpitation and hæmoptysis; quite lately, recurrence of hæmoptysis; quantity of blood expectorated about a teaspoonful. Both of these accesses followed bodily and mental excitement, having been waltzing on one occasion, and on another having visited friends in the city. The last and fatal attack was while in the city. Dr. B. was called to her, and found her at the house of one of her acquaintance, which she had with difficulty reached, having been seized with dyspnœa while walking. She was breathing very hurriedly, with great distress, and coughing occasionally; raised large quantities of watery fluid, quite drenching several napkins. She was in a sitting posture, scarcely able to speak—begging for air, with hands livid and cold, and pulse scarcely perceptible. Dr. B. directed the application of external irritants, heat to the extremities, and syrups, nitrous ether, &c., with a view to exciting the circulation and relieving the cough. Patient grew worse and more distressed. Dr. Ware, sen., saw her in half an hour after the attack, in consultation with Dr. Bowditch. During a temporary absence of Dr. B., the patient rose suddenly from the bed, in a paroxysm of dyspnœa, fell back, and died immediately. Dr. B. detected very fine crepitant râle in right back, throughout, during a very hasty examination; the condition of the patient not allowing anything more than the most trivial exploration. No post-mortem examination could be obtained. Dr. B. thinks there must have been chronic cardiac disease, and that this was conjoined with pulmonary œdema, which, suddenly occurring, had suffocated the patient.

Nov. 11.—*Encephaloid Tumour between the Rectum and Bladder, with the same disease in the Liver.*—Dr. JACKSON reported the case which he had recently observed, and which occurred in the practice of Dr. M. S. PERRY. The patient was sixty-four years of age, had formerly been a seafaring man, but for many years had led a very sedentary life. Subject to hemorrhoids, and habitually costive; but otherwise healthy. Last February there came on pain in defecation, and often so urgent as to require opiate injections. Large

doses of cathartic medicine required at first; but about the month of April diarrhœa came on, and continued almost without intermission until death. Extensive sloughing took place about the months of May and June, and with much relief to pain, though there continued much tenesmus; dej. involuntary. In May and June, hemorrhage occurred frequently, and to such an amount as to threaten life. Patient also suffered much from dysuria, became greatly reduced, and gradually sank under the disease, but without any symptoms referable to the liver.

On dissection, the cavity of the pelvis was found to be filled by an extremely soft and well marked encephaloid mass; partly white, but more or less coloured by blood, of which there was a considerable effusion. In the midst of it was a cavity one and a half inch in diameter, and formed perhaps from such an effusion; the inner surface being generally smooth, and of a deep brown colour, but having some old coagula adhering to it. The rectum had sloughed entirely away, to the extent of about five inches; commencing just above the anus, and involving the whole circumference, except for a narrow, irregular, thin strip. The edges of the intestine were soft and much discoloured, but not at all carcinomatous; the mucous surface just above the disease being healthy; and it was upon this last circumstance that the tumour was supposed to have originated externally to the intestine. The large-intestine contained throughout a considerable quantity of soft feces. Bladder somewhat reticulated upon the inner surface, but otherwise not remarkable.

The liver contained great numbers of carcinomatous masses, generally tinged by effused blood, though some were of a pearly white colour. Hemorrhagic tendency strongly shown, though there were no large effusions. The most unusual appearance in this organ was the formation of cysts, varying from half an inch to an inch in diameter; some contained clear, yellow serum, and were lined by a serous-looking membrane; others contained almost pure blood, viscid and very dark; but generally there was a mixture of blood and serum. As in the case of the cyst in the pelvic mass, the inner surface was often smooth, and of a dark brownish colour, as if formed from the effused blood, with some opaque buff-coloured deposit, which under the microscope was found to be fat; other cysts were lined by a white encephaloid substance, or by a mixture of this and effused blood. In one or two places, there was found, to the extent of about two-thirds of an inch, a very delicate, yellowish, lax, cellular tissue, infiltrated with serum, but quite defined, and without a trace of encephaloid or effused blood; an appearance not very unlike what is occasionally found in the brain after an old apoplectic effusion. Intervening structure healthy, as usual in these cases. Organ not enlarged. No peritoneal adhesions; nor was any further disease found in the other organs.

Nov. 25.—*Encephaloid Disease of the Liver and Stomach. Pulmonary Apoplexy; with Rupture into the Pleural Cavity.*—Dr. JACKSON reported the case, which occurred in the practice of Dr. ALLEN, of Cambridgeport, and which

he examined a few days ago. The patient was a farmer, aged fifty-four, and of robust health, except that for several years he had been subject to lead colic, the lead pipe that supplied his house with water being very much corroded; there was also the characteristic blue line about the patient's gums. Last April he took, for an obstinate attack of constipation, very active cathartics, and at last croton oil; this was followed by intense pain in the abdomen, which lasted for several hours, and more or less for some weeks. From that time until his death he complained of distress, and often of urgent pain in the region of the liver, tenderness on pressure over the organ, and a sense of weight so that he was unable to lie upon the left side, and often, when sitting up, was obliged to incline forwards upon the back of a chair; the distress he often compared to constriction as from a cord about the waist. The liver was felt to be enlarged when Dr. A. saw him about six weeks ago, and increased considerably in size before death; dej. clay-coloured at that time, but under the use of the hydriodate of potash the colour soon became natural; skin never yellow; never complained of his stomach; appetite sufficiently good until the last three weeks, and he even ate a slice of boiled beef four days before death, and bore it well. This comparative latency Dr. J. has observed in several other cases of carcinoma of the stomach, where the disease seems to have supervened upon that of the liver. No hæmoptysis, nor any other symptom tending to a suspicion of pulmonary disease. Patient became much emaciated; but kept about until three weeks before death, from which time he was confined to his bed.

On dissection, the liver weighed about nine pounds ten ounces, and was filled with encephaloid masses of about the average consistence, contrasting strikingly with the case last reported, as it did also in the fact of there being nowhere any effusion of blood in connection with the carcinomatous deposit. There was also another striking difference between this case and the other, in regard to old peritoneal adhesions, which here were universal between the liver and the diaphragm. Such adhesions Dr. J. has rarely, if ever, observed in other cases of this disease, and he is disposed to connect the fact with the local symptoms, of which the patient had complained so much during life; the disease, when confined, as it usually is, to the interior of the organ, being not unfrequently met with when nothing had led to a suspicion of its existence.

The pyloric portion of the stomach was pretty extensively carcinomatous, with ulceration, which penetrated into the muscular coat, the structure being whitish and condensed; the cellular membrane and lymphatic glands in the neighbourhood were also affected; and there were traces of the disease upon or beneath the diaphragmatic pleura on the right side, and the peritoneal surface within the cavity of the pelvis.

The left side of the chest was observed to be somewhat enlarged, and very resonant on percussion; and on puncturing it there was a free escape of inodorous gas. The cavity contained five or six ounces of nearly pure blood,

and over the anterior portion of the lower lobe was a thin, filmy deposit of fibrin, apparently from the effused blood; there being no appearances of pleurisy. Beneath this fibrinous deposit the pleura was stripped up to some extent, and in the substance of the lung immediately beneath it was a ragged cavity, which, though empty, was capable of holding two or three ounces; the surrounding pulmonary structure being more or less infiltrated with blood; into this cavity the air entered freely from a neighbouring bronchus on inflation. Pulmonary apoplexy was also found to a considerable extent in the back part of the upper left lobe, and to some extent in different parts of the right lung, but without any further breaking down of the structure. Dr. J. had never before met with laceration into the pleural cavity in these cases, but referred to Cruveilhier's remarks upon its occurrence. The other organs were healthy.

Nov. 25.—Buttons in the Intestines producing symptoms of obstruction. Case reported by Dr. HOMANS.—A male child, aged 14 months, on the 23d of October seemed quite unwell, after passing an uneasy night. There was strong effort at expulsion of matters from the bowels. Under these straining attempts, some feces passed, without relief of symptoms; pulse accelerated; skin hot; tossing of head, &c.; slight vomiting also occurred; suspicion of intussusception arose. In the night, the above symptoms having been on the increase for twenty-four hours, a teaspoonful of castor oil was given. Through the night severe pain of paroxysmal nature; the intervals marked by perfect ease; the pain being compared by the mother to uterine efforts in parturition. On the following day, the child was much more ill and feverish, and Dr. H. saw it at nine o'clock A. M.; tenesmus urgent; patient moaning; skin hot; pulse full and quick; a slight discharge of bloody water from bowels. On palpation of abdomen, a hard swelling was detected, about half way between umbilicus and crest of right ilium, of the size of a pullet's egg. On examination by the rectum, a hard mass was discovered, somewhat yielding to pressure by the finger. A large enema was given from a powerful syringe, which was unsuccessful; the fluid being returned before overcoming the obstruction. A second injection was given; in a short time an explosive sound (internal) immediately preceded the discharge of a large lump of solid feces, pushing before it a small *button*; several dejections followed in quick succession, composed of solid and fluid matters, among which were passed *seven buttons*, made from horn, porcelain, and metal, and varying in size from those used for pantaloons, to the ordinary shirt button. The child was soon relieved, and has been well since. Nothing had passed from the bowels for forty-eight hours previously to the attack.

Dr. Homans remarked that the case was important as illustrating the necessity of accurate diagnosis; several of the distinctive features of intussusception and hernia being present, viz., the discharge of bloody fluid, and the tossing of the head so often noticed in intussusception; while the coldness of

the external surface, frequently remarked therein, did not exist in this case. There was slight vomiting at first, and likewise the inability of passing feces, even with violent effort, which might have led to a suspicion of hernia. The detection of a tumour by the finger suggested the use of an enema, as affording a chance for the removal of any foreign body obstructing the intestine.

Nov. 25.—Collection of Pus in the cavity of the Uterus; operation for opening Os Uteri, closed by a firm Septum; progressing recovery from uterine disease; subsequent death, after gastric disorder, induced by excess in eating.—The subject of the subsequent report was a patient of Dr. HYNDMAN, of this city, from whose letter, giving a history of the case, as first observed by him, the following abstract is presented. The letter was read to the Society by Dr. STORER, who afterwards saw the patient in consultation, and whose observations will be given below.

Dr. Hyndman first visited the patient on 3d of August last; nine days previously, on the second day of a regular menstrual period, patient wetted her feet; catamenial discharge ceased suddenly. Patient reported having had a *rigor* the day before Dr. H. first saw her; acute pain in left side followed, “extending from the crest of the ilium, upwards, as far as the edge of the floating ribs, and as far forwards, towards the mesial line, as the umbilicus.” Calomel and opium, in combination, were given, and “turpentine stupes” applied over abdomen. The above-mentioned pain extended, after three days interval, across mesial line, towards right side; but little pain was complained of, at any time during the attack, over the pubic region: nothing would have excited suspicion of metritis. The patient improved under the above treatment, and, in a fortnight from the time when she had the *rigor*, was able to be about. Three weeks later (six weeks from time of sudden suppression of menses), patient called to say “that she had not been *unwell* for six weeks;” she was pale and “chlorotic” in appearance. Dr. Hyndman prescribed tonics; a week afterwards, on seeing his patient, Dr. H. was told by her that she had noticed “something of a swelling,” just above pubis; on examination, Dr. H. observed “an unusual fullness in that region;” he supposed it might be retained menstrual fluid; swelling, however, was not very marked: *savine*, in conjunction with the other medicines, was ordered. Shortly after, imprudence in eating induced an attack of gastric irritation, accompanied by pain and vomiting. Relief by opiates. Six weeks after this, the abdominal “swelling,” before mentioned, had so increased that the appearance was that of a person in the seventh month of utero-gestation. Dr. Storer was now called in consultation.

Continuation of the Case. By Dr. STORER.—Dr. S. saw this patient with Dr. Hyndman, on the 11th inst., and found her to be a young woman seventeen years of age. Her abdomen was as large as that of a woman’s far advanced in pregnancy, presenting a peculiar form, however, the enlargement being anteriorly, as if something projected directly forwards—there was but slight

fullness laterally. She complained of some tenderness in abdomen, upon pressure. The breasts were not enlarged, and no change in the areolæ could be perceived. Upon examination, *per vaginam*, which produced considerable uneasiness, the body of the uterus was found to be somewhat distended, and upon pressure gave to the finger the sensation of contained fluid. She has had no discharge of any kind from the vagina since the suppression of her catamenia. Dr. S. agreed with Dr. Hyndman in his diagnosis—that the uterus was distended by fluid—but, as the menses had been suppressed only about three months, he thought that they alone could not have produced the great tumefaction, but that, acting as an irritating cause, they had probably excited the uterus to pour out an abundant secretion besides. It was proposed to pass an instrument into the os uteri to empty the organ of its contents. Dr. Hyndman consenting, Dr. S. endeavoured, the sixth day, to pass a *gum-elastic catheter*, supposing that there would exist only a simple agglutination of the lips together—but was surprised to find that the instrument would pass but a short distance beyond the os uteri, and that only by applying considerable force—and when withdrawn, its extremity was covered with mucus and blood. *Simpson's sound* could be passed with no more ease. Dr. S. decided that the adhesion of the cervix was so firm as to require a trocar, or some other cutting instrument, to remove it, and suggested that the operation should be performed by a surgeon. Dr. J. M. Warren saw patient the following day, and after a very minute examination of the case, coincided in the above opinion—and passing a trocar into the os, and then, with considerable force, through the adhesions of the cervix, freed the uterus of *seven pints of offensive pus*. The girl is now (25th) doing well, although more fluid is evidently collecting in the uterus.

It would appear, from the above history, that with the *peritonitis*, produced by the sudden suppression of the catamenia, *metritis* had existed—which united the lips of the os, checked the menstrual function, and caused the lining membrane of the uterus to pour out this great quantity of purulent matter.

It may not be uncommon for *metritis* to exist, and for any secretion to be poured out of the uterus, which may be the result of the inflammation—but from the fact that several writers make no reference to any *collection of pus* in the uterus, and that the translator of Boivin and Dugès' work points to a case of this description by Dr. John Clarke, contained in the third volume of the "Transactions of the Society for the Improvement of Medical and Chirurgical Knowledge," it is inferred that cases of a similar character to that now reported must be of rare occurrence.

Upon looking up Dr. Clarke's case above referred to, Dr. S. found it entitled, "Case of a Collection of Pus in the Cavity of an unimpregnated Uterus." In this case, the patient was sixty-five years of age, and had ceased to menstruate for several years. After having a discharge, for several weeks, from the vagina, which was at first sanguineous, but afterwards became of a brownish colour, and offensive to the smell, "the patient was suddenly seized upon waking,

during the night, with violent pain in the lower part of the abdomen, and a sensation as if something had given way there." The next day she died. Upon an examination of the body after death, the uterus was found gangrenous, and perforated at its upper part—through which opening, pressure being made, a quantity of offensive pus issued; seven or eight ounces of similar pus were found in the cavity of the abdomen, which had been poured out of the uterus, and about five ounces were still retained in that organ. The orifice between the cavity of the uterus and its cervix was closely contracted, so as not to have allowed the contents of the uterus to be discharged through it; and the previous discharges which had existed "must have been poured out from the cervix and os uteri, and from the vagina."

Sir Charles Mansfield Clarke, in his "Observations on those Diseases of Females which are attended by Discharges," speaks of two cases of large collections of pus being produced in the uterus by inflammation; in one of them, "the uterus was found to be so much enlarged as to fill the cavity of the pelvis." A spontaneous discharge of the fluid finally occurred from the vagina, and the patient recovered. In the next case, "the pelvis was found completely filled by an enlarged uterus, which was also perceptible above the pubis," a sudden discharge of offensive pus took place through the rectum, which continued to flow for a time with the feces, and then entirely ceased; the uterus returned to its normal size, mienstruation took place, and the patient recovered.

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At a subsequent meeting of the Society (Dec. 23d), Dr. Storer reported as follows in regard to the patient whose case is above given. Three pints of pus, in addition to the former quantity, had been removed from her uterus, by Dr. J. M. Warren, four weeks after the first operation. About a week after the second operation, having, for weeks, lived upon a liquid, farinaceous diet, the patient ate immoderately of potatoes and cabbage; immediately after this meal, she was attacked with bilious vomiting and purging, which resisted all remedies, and she rapidly sank and died. Dr. Hyndman, who had charge of her, says that not the slightest febrile action followed either of the operations, but that she was doing very well, until the above narrated excess in eating was committed. No post-mortem examination was obtained.

Dec. 9.—Scirrhus Tumour of the Rectum and Bladder.—Dr. J. M. WARREN exhibited a specimen of scirrhus disease of the rectum, and stated the case, which was as follows: The subject was a gentleman fifty-six years old. Nineteen years before, he had been operated on for the piles, and at that time a small hard tumour was discovered near the anus, which he declined having interfered with. He has occasionally had attacks of pain in bowels and indigestion, but never any serious symptoms in the rectum. He has always had diarrhoea since. About a year ago, Dr. W. was called to him on account of a retention of urine, and on an examination being attempted per anum, it was found that the rectum was obstructed by a scirrhus mass, which pre-

vented the introduction even of the little finger. The retention was gradually overcome by the use of the catheter in the course of a fortnight, and the patient has had moderately good health during the summer. Two months since, Dr. W. was called to him with a second retention, which gave way to remedies, without the use of the catheter. It was, however, shortly followed by a universal dropsical effusion, and the patient gradually sank exhausted.

On examination, the last four inches of the rectum were found pervaded by a scirrhus mass, leaving in the centre a narrow pathway for the feces. The disease had extended to the bladder and urethra, so as to encircle the tumour and apparently to implicate what has been called the middle lobe of the prostate gland, which projected into the bladder and occupied about a third of the cavity.

Owing to the loose state of the bowels, this patient had been able to live for nineteen years with this tumour, and suffered but little inconvenience from it, and in fact was not made aware of its existence by any pain or other sensation, unless by an occasional irritation of the skin in the neighbourhood, on account of the imperfect manner in which the evacuations were controlled.

The left kidney was in a high state of inflammation, and there was some purulent deposit in the pelvis of that organ; the ureter was not extraordinarily distended.

It might be stated that, during the last week of his life, he refused food entirely, on account of the difficulty and pain in swallowing, caused by an inflammation in the fauces. Very severe hiccough ensued, which was mitigated, and the last part of his life made easy, by the use of chloric ether administered from time to time on a sponge by the nurse, as occasion required.

Dec. 9.—Acute Nephritis; latent.—Dr. JACKSON exhibited the specimens, and reported the following case, which he examined a few days ago, and which occurred in the practice of Dr. John Ware. The patient was a woman fifty years of age, and had been sick since the summer of 1849. Disease came on with vomiting, purging, and excessive pain in the abdomen, lasting more or less for several weeks. Last February, Dr. W. saw her, with much the same symptoms; there was then also felt a tumour below the right hypochondrium, varying much in size at different times, and usually very tender and painful; whole abdomen occasionally distended and tympanitic; she gradually sank; the immediate cause of death being probably the nephritis, or a pneumonia which was found to some extent, though no symptoms referable to either disease were observed during life. The urine not being deficient in quantity, though for a short time before death it deposited a thick lateritious sediment.

On dissection, both kidneys were found most extensively inflamed, and the form of inflammation very much like what is observed in the case of purulent deposits; being in distinct foci, from a fourth to half an inch in extent, and characterized by an effusion of thick pus, or by a mixture of pus and lymph,

or by the simple infiltration of lymph; the redness about the deposits being very limited, and evidently due, in part, if not wholly, to the extravasation of blood. Where pus alone is found, proper abscesses are of course formed. The intervening structure healthy; the tubular portions being scarcely, if at all, affected; mucous membrane very slightly affected. The idea of phlebitis not having occurred, the veins were not examined.

The stomach and intestines were examined carefully throughout, and found to be quite healthy. The liver, however, was somewhat diseased in structure; and though not generally enlarged, the right lobe was prolonged downwards nearly to the ilium, forming the very distinct and movable tumour felt during life. The absence of any disease in the alimentary canal, even supposing the liver to have been previously affected, appeared to be an interesting circumstance.

Another curious fact was observed in this case, and which Dr. J. has met with once before, though he has never heard the possibility of it alluded to, and that was the existence of a small distinct tumour formed by the pylorus, though this portion of the stomach, as well as every other, was healthy, the thickness and consistence being perfectly normal. The tumour was as distinct after death as before, and the explanation of it was determined as soon as the abdomen was opened.

Dec. 9.—Tumour of the Orbital Cavity. Extirpation of the Eye. By Dr. HOOPER.—The patient from whom this disease was removed was a pale, feeble-looking man, fifty-three years old. The disease had existed in the left eye for three years, was never attended with any severe pain, but a sense of weight and uneasiness. The eye was much protruded, the organ itself not enlarged, cornea transparent, much chemosis of the conjunctiva and eversion of the lower lid, vision entirely gone for the last two years. Oct. 29. An exploratory incision gave issue to a quantity of serous fluid, and the protrusion became much diminished, but again increased; and on the 26th of November, the eye was removed (patient under the influence of ether). There was found behind it, and slightly adherent to the sclerotica, a tumour, which, examined by Dr. H. J. Bigelow, was found to be of a semi-transparent structure, and of an albumino-fibrous nature. Dr. Bigelow showed drawings of the microscopical appearances; simple nucleated cells, with no appearance of a cyst.

Dec. 23.—Case of Encysted Ovarian Tumour. Reported by Dr. COALE.—Mrs. H., æt. sixty-eight. Has had four children. Health not good after birth of last. Menses irregular for some time, and ceased at age of forty-three; health much restored afterwards. Early in 1843 fell down a few steps, striking the lower extremity of the spine; fainted at the time, and felt very ill. Returned home the next day, three miles distant, and was confined to her bed three weeks, and three to her room—in all, six weeks. From that time her health declined, and on the 12th of the following April (three months after the acci-

dent), the appearance of enlargement in the left iliac region commenced. By the 29th of October, 1845, about thirty-two months after the accident, the enlargement was so great as to require tapping. The operation was repeated, and the quantity of fluid discharged is as follows:—

	lbs.		lbs.		lbs.
1845, Oct. 29th, . . .	30	1849, Nov. 9th, . . .	23	1850, August 1st, . . .	15
1846, June 23d, . . .	18	Nov. 29th, . . .	22	Aug. 12th, . . .	15
1847, Feb. 17th, . . .	25	Dec. 17th, . . .	21	August 23d, . . .	11
Aug. 3d, . . .	20	1850, Jan. 5th, . . .	21	September 3d, . . .	11
Dec. 14th, . . .	24½	Jan. 22d, . . .	21	September 14th, . . .	14
1848, Ap. 13th, . . .	28	Feb. 8th, . . .	22½	September 24th, . . .	14
July 12th, . . .	27	Feb. 23d, . . .	24	October 3d, . . .	14
Sept. 18th, . . .	23	March 10th, . . .	21	October 12th, . . .	14
Nov. 16th, . . .	26	March 26th, . . .	19	October 22d, . . .	16
1849, Jan. 17th, . . .	27	April 9th, . . .	19	October 31st, . . .	14
March 4th, . . .	26	April 23d, . . .	18	November 8th, . . .	15
April 13th, . . .	25	May 7th, . . .	16	November 16th, . . .	12
May 21st, . . .	20	May 20th, . . .	16	November 24th, . . .	16
June 25th, . . .	22	June 1st, . . .	16	December 2d, . . .	12
July 28th, . . .	22	June 14th, . . .	18	December 10th, . . .	13
Aug. 26th, . . .	29½	June 27th, . . .	15		
Sept. 22d, . . .	27	July 9th, . . .	13		
Oct. 17, . . .	26	July 20th, . . .	12		
				Total, 51 tapplings, 989½ lbs.	

The form of the tumour during life could be readily distinguished through the walls of the abdomen, lobulated, not tender, with a very limited mobility. Across the lower part, coming from the left side on a level with the anterior superior spinous process of the ilium, and disappearing about the pubis, was a very perceptible band, soft and elastic, giving a sensation of containing fluid. This, on examination after death, was found to be the sigmoid flexure of the colon, forced forwards and upwards into that unlooked-for position apparently by the tumour commencing immediately behind it, and carrying it up with its growth. With the exception of obstinate constipation, and an occasional pain at the epigastrium when the distension was great, there was no particular suffering during the progress of the disease; and the clearness of mind and cheerful temperament of the patient were maintained till within an hour or two of the decease. In tapping, a variation of the operation was practiced, which may be worth mentioning. Upon emptying one sac, without withdrawing the canula, the trocar was reintroduced and pushed into another, and sometimes into a third and fourth. In this way the bulk of the tumour was much more diminished than would have been done by the puncture of one sac alone, and without any additional pain or danger to the patient.

The fluid at the first operation was thin and clear; latterly, it became as thick as the white of an egg, and occasionally turbid, with considerable admixture of lymph. Some of the smaller sacs, however, discharged in the manner above described, contained a fluid of almost inky blackness.

Death occurred from very gradual exhaustion of nature. Examination after death displayed the tumour—a thin sac, fitting the cavity of the abdomen. It was covered partially on the right by recently effused lymph—the result of a slight peritonitis of the last few days. Attachments existed with

the anterior walls of the abdomen for the space of about four inches square, where the punctures had been made, and more extensive ones in both iliac fossæ. The os uteri was almost obliterated—the uterus lengthened—its posterior wall closely attached to the tumour. The right Fallopian tube was free; the left and its ovary lost in the tumour. The larger sac broke in handling it, displaying in its interior numberless others of various sizes, and these in turn containing others.

Dec. 23.—Dr. BOWDITCH reported the following case:—An Irishman, thirty-five years of age, a corn-measurer, had been for a long time exposed to the dust of grain, and a cough had been often excited by it. Finally, copious “vomiting of blood” occurred (according to statement of patient). The last hæmatemesis took place about three weeks since; but there had been three attacks during the year, and, each time, about a quart had been lost. Patient referred all symptoms and sensations to his *stomach*. On inquiry, Dr. B. found he had had slight cough at other times than when inhaling dust, although the patient scarcely allowed that it occurred, so very trivial was it. There was some emaciation. On auscultation, cavernous respiration, with gurgling, at lower half of right lung. There was less sound, generally, in this lung than in the other, but no marked signs at the top indicating tubercles. On the contrary, all the chief physical phenomena were at the lower parts. Three days after first auscultation, a second examination discovered all the above signs gone, or nearly so: patient improved. In a week, the bloody sputa, a few of which were perceptible on his entrance at the hospital, had disappeared. Five days ago, he suddenly again raised about ℥xvi of blood, which was apparently purely arterial; it was raised in the night, without previous warning, and had formed into a large dense coagulum (as if it had been taken from a vein in the arm), in the sputa-cup. This was noticed at the physician’s visit the next morning. The physical signs above enumerated again presented themselves. Since this, they have subsided again.

Dr. B. remarked that this case is to him unique in its characteristics; he said it might suggest the idea of pulmonary apoplexy; there were doubtless condensation and congestion of the pulmonary tissue, which were relieved by the hemorrhages—probably no cavity.

Dr. BIGELOW, sr., said, in reply to a question from Dr. Bowditch, that he did not remember precisely such a case; he had often doubted whether pectoriloquy could be said to exist, properly, unless gurgling assured us of a cavity.

Dr. Bowditch remarked, that the decision between pectoriloquy and bronchophony was not the point; but whether such a case, with the peculiar attacks of hæmoptysis, and the sudden changes in the condensation of the lung, according as the bleeding occurred, was not unique.

Dec. 23.—*Excessive Liquor Amnii in a case of Twin Birth. Dangerous Symptoms.* Case reported by Dr. STORER.—On the 13th ult., Dr. Storer was suddenly called to a woman in labour at her seven and a-half month of pregnancy. She had been unwell for some months, complaining of much cough and difficulty of breathing, but had consulted no physician, and, for the greater part of the time, had performed her ordinary domestic avocations. He found her sitting in her chair, suffering from a severe pain; upon its cessation, she was placed upon her bed, and examined per vaginam. Feeling, through the unbroken membranes, a hand, he immediately ruptured her bag of waters, reached a foot, turned the child, and delivered. This was readily accomplished, on account of the small size of the infant. Upon the birth of the child, the mother experienced, immediately, two or three exceedingly strong pains, in the midst of which she coughed much, and expectorated quite a quantity of frothy, bloody mucus. Upon examination, he found a second bag of waters: his patient was herself satisfied she had still a child within her. As she was suffering greatly from dyspnœa, which almost prevented her from remaining on the bed, even in a semi-recumbent position, he ruptured the membranes. An enormous quantity of liquor amnii passed off. At this moment a severe pain ensued, which continued a minute or two, during which Dr. S. thought she must die. The dyspnœa was very distressing; there was a constant disposition to throw off bloody mucus; her countenance was livid throughout; the expression frightful; about four respirations in a minute. The pulse at the wrist imperceptible. Dr. S. was about to send for his forceps, when the head was expelled—the mother being supported nearly erect, almost unconscious of her delivery. In this state, it seeming impossible that she could survive for any length of time, the immediate friends of the family were summoned to see her die. For several hours she continued in the condition just described, gasping for breath, constantly fanned to enable her to breathe at all. Her lips and nails were of a deep purple colour—her face and neck more or less livid; she was unable to speak or to swallow. She lived, however, through the night, and the next day, supported, as has been before stated, in an erect posture—procuring some sleep; and during the latter part of her time taking a small quantity of stimuli, such as brandy, &c. The second night she was able to lie down in a semi-recumbent posture. The third night she lay almost horizontally. From this time she convalesced slowly, and is at this moment in a very comfortable condition, complaining only of debility. She is hereditarily disposed to phthisis, and has dullness on percussion and deficient respiration at the top of one of the scapulæ; but she has rallied from her confinement, much to the amazement of all who were with her, not excepting her physician.

While sitting up in bed, hours after her confinement, Dr. S. could hear no respiration over the greater part of the chest; at the apices only of the lungs did any air appear to enter, and there with great difficulty.

The children, which are still alive and well, were quite small, weighing

only about five pounds each; but the quantity of liquor amnii was very great—a larger quantity than Dr. Storer remembers ever to have seen, unless there existed at the same time a diseased placenta.

Dec. 23.—Puerperal Fever—unusual Symptoms. By Dr. STORER.—Dr. Storer stated that, as several puerperal cases had occurred since the last meeting, he would refer to one which fell under his treatment. On the 9th instant, he was called to a lady, thirty-five years of age, in labour with her third child; she was delivered after six hours pain. The first three days she convalesced, as well as after either of her previous accouchements. On the morning of the fourth day, he learned she had had a restless night, and had had three dejections. When he saw her, she had no pain in the abdomen, and felt no uneasiness upon pressure being made there; the pulse but slightly accelerated; she complained only of *an urgent disposition to stool*. Her mother then told him that, for several weeks previous to her confinement, she had suffered from a *diarrhœa*, for which she was unwilling to take any medicine. Dr. S. ordered an opiate injection and demulcent drinks, by which she seemed relieved towards night. On the morning of the 5th day, complaining of *some pain upon pressure* over the uterus, she was leeches, and minute doses of calomel and Dover's powder were administered. She was relieved by the leeches, but her aspect was bad: the breathing was not much embarrassed; the pulse only 100, and she was not very restless. On the morning of the sixth day, the pain returned in the abdomen, accompanied with slight fullness there; a *blister* was ordered. On the 7th, pain much relieved; irritability of bowels lessened, but still *uneasiness* continued; she seemed much exhausted and depressed; continued medicine. On the 8th, *milk and lochia* suppressed for the first time; great prostration; abdomen more full, but still slight complaint upon pressure. On the 9th day after delivery, *died*. Was *conscious* throughout the whole of her sickness, and for several days continued to apply her child to the breast.

Dr. CHAS. E. WARE remarked that he also had had a fatal case of puerperal fever. He was called to Mrs. M. at 5 o'clock A. M., Dec. 9th, in labour. She had had slight pains all night. The waters had broken, and everything appeared right. She continued in about the same state till noon, making very slow progress; at 6 P. M., the pains diminishing, and the child having made no progress for several hours, she being a feeble and nervous woman, the forceps were applied, and one child, a male, delivered with very little difficulty. It was then found that there was another child, in the membranes, presenting by the arm. It was turned, and the feet brought down. At the head, it was arrested, the cord pulsating, and no pains. It remained about twenty minutes in this state before it could be extricated, and cried in the vagina at least ten minutes before it was born. It was still-born, but was resuscitated, and both children are now doing well.

The mother was much exhausted, but was got comfortably to bed. The next morning her pulse was 128, and she complained of a little sore throat. From this time her pulse continued to fall, till the 13th, when she had her milk, and everything appeared to be doing well. Her pulse was 100. That day she took oil, which operated well. In the evening, however, she had chills, a great sense of fatigue, and passed a restless night. The next morning she had a pulse of 120. There was no unusual soreness, nor fullness about the abdomen. Her respiration was natural, with a full expansion of the abdomen. Her milk and lochia were abundant and natural. She only complained of her throat, about which there were no apparent signs of trouble. Her tongue was dry, and there was sordes on the teeth. The next morning there was delirium, which continued more or less active until her death. Her pulse continued to increase in frequency, and was so fluctuating in character as to be with difficulty counted during the last two days of her life. While her consciousness continued, she only complained of her sore throat, and a sinking sensation at the epigastrium; never of the abdomen, which did not present any evidence of peritonitis or phlebitis, in the symptoms. Her milk left her. Her lochia continued to the last. She died the evening of Dec. 18th. There was nothing in her symptoms to call for or admit of depletion. She was treated with quinine and stimulants.

Two of her children, who were in the house, had sore throat at the time that she was confined. Her husband had one, commencing on the day that his wife died. They were all of an exceedingly mild character, and presented nothing malignant. Dr. Ware attended another woman in child-bed the night that Mrs. M. was confined, and another the next day, both before Mrs. M. presented any untoward symptoms. Both patients did very well.

Jan. 13.—Imperforate Rectum; laceration of the Intestine. Case reported by Dr. B. E. COTTING.—The child, a female, was born on the afternoon of the 8th inst.; on the 10th, at 3 P. M., Dr. C. saw it in consultation, and found it almost pulseless; abdomen tender and tympanitic; passed the little finger half an inch or more up the intestine, and was met by a firm, fleshy resistance; no operation was attempted, and the child died in about four hours. On dissection, the abdomen was found distended with gas; and in the cavity was a large quantity of meconium, with here and there some redness, and a small patch of lymph upon the peritoneal surface. As usual in such cases, there is a small portion of intestine below, with about the same extent of imperforation. Just above this last, there are seen two longitudinal rents, an inch or more in length, which extend through the outer coats, and one through the entire parietes. The intestine, which was exhibited, has not now the appearance of having been much distended; and neither does it show any signs of inflammation, externally or internally.

Jan. 13.—Dr. COTTING also presented a calculus that had formed in the neighbourhood of a large abscess about the tonsil, inflammation having commenced last November. The patient is a man forty-five years of age. The calculus, which has been only recently discharged, is about as large as the tip of the little finger, and white, somewhat crumbling, and of an earthy appearance, but laminated towards the centre.

Jan. 13, 1851.—*Polypus of the Ear.* By Dr. HOOPER.—The patient from whom this was secured, a man thirty-five years old, had a similar operation in April last; since that time, the present polypus has grown. It is a fibrous polypus of extraordinary size. The chief symptoms attending it were otorrhœa, and an inconvenience in moving the jaw. A slight hemorrhage followed its removal, soon ceasing on syringing the ear with cold water.

Jan. 27th.—*Malignant Tumour arising from Periosteum of left Tibia—Removal of the Limb.* Case reported by Dr. J. M. WARREN.—The patient was a mechanic, fifty-two years of age; his general health has always been good; knew of no hereditary tendency to carcinomatous disease; exhibited none of the appearances of the diathesis.

About twenty-three years ago, he struck the hook of a heavy ox-chain against anterior aspect of left tibia at about its middle. Within twenty-four hours after the injury, noticed a "swelling as large as a kernel of corn," which he was confident was not like the swelling of an ordinary bruise, being much harder, not discoloured, and excessively tender. This gradually increased, until, in three or four weeks, it was as large as a pullet's egg. It so continued for twenty years; never painful, but always excessively tender.

Three years and a half ago, while driving a nail, the hammer glanced and struck partly on the skin bone and partly on the tumour. The pain from the blow was excruciating, continuing for twenty-four hours, when it gradually subsided and he went about his business, but was subject to twinges of pain at intervals of a few hours for two or three months, the average amount being greater at night.

Two or three months after the blow, he noticed a gradual enlargement of the tumour, which, in 18 months, had grown to the size of a large orange. The increase of pain was in direct ratio to the growth. At this time, the whole of his limb below the tumour was swollen and cedematous, the tumour itself very red—at apex, a bright crimson, the integument covering it very thin and tense.

From a slight accidental abrasion, granulations now shot out, bleeding freely at the slightest touch. About a week after, the tumour was removed by a surgeon, and portions of the tibia, to which it proved to be adherent, chipped off. The wound healed in three months, and remained sound for a year. Then, a little to the outside of the cicatrix, a swelling was noticed of the diameter of a penny. This followed precisely the same course as the preceding tumour,

altogether resembling it, except in size and situation, being a little more on the outer aspect of the leg, and a little larger.

The appearance of the tumour was as follows just previous to removal of limb. Six inches above malleolus, on outer aspect of left tibia and apparently adherent to it, was a lobulated tumour, eight and three-quarters inches in circumference, two inches in height. It was somewhat constricted at its base by the integument through which it had extruded, as if forced up from beneath. Just to inside of its base was a hard tumour, in size and shape like a large almond, which he said very much resembled the original tumour of twenty-three years ago. This had been about six months in acquiring its present size.

Ten days ago, apex of large tumour became sloughy, and so continued. Integument at base was reddened, and the tenderness was greatest at that spot. When the limb was at rest, the pain was slight; after exercise, much increased. Patient kept about his business till within ten days.

No other tumour observed externally; none felt through abdominal parietes; no apparent enlargement of inguinal glands.

Dr. Warren removed the limb, above the knee-joint, by the circular method. On sawing the tibia longitudinally, after removal, it was found that the original tumour was between the periosteum and the bone. Its size was about that of a walnut; it was quite firm, white and fibrous in appearance; springing from one side of it was the large fungous growth described above.

Jan. 27.—Tumour of Right Arm, requiring amputation at the Shoulder-joint.—Dr. J. MASON WARREN exhibited a tumour apparently of a malignant nature, and stated the case, which was as follows. The patient was a tall, thin man, thirty years of age. He had always been healthy until last April, when he had a discharge of blood from the kidneys, unattended with pain, which lasted him for one or two weeks. In June, the present tumour appeared as a small hard lump under the skin of the arm near the insertion of the deltoid muscle. This had gradually increased until it nearly encircled the arm, extending under, and raising up, the brachial arteries and nerves. The motions of the arm were not much affected by its pressure, but latterly it had taken on a more rapid increase, and the active portion of it was somewhat painful. Dr. Tewksbury, of Portland, considered the case a critical one, demanding the removal of the tumour or the arm, and directed the patient to Dr. W. After a very careful examination of the tumour, which was quite firm and movable, it was agreed that the patient should be put under the influence of ether, the tumour cut into, and if found to possess the character of a malignant growth, that the arm should be removed at the shoulder-joint.

The operation was done on the 15th February, and on the tumour being incised, all the gentlemen present, viz: Dr. Ray, of Kentucky, Drs. Thorndike, Minot, Williams, Foltz, Brown, Stone, and Gore, coincided with Dr. W. in regard to its having the appearance of a carcinomatous growth. The bleeding

from it, which was quite free, was therefore stanchd with a bit of sponge, and the removal of the arm proceeded with. This was done by an anterior and a posterior flap, the former being made from without inwards, by means of a scalpel, in order to have a more regular wound, and the better to avoid impinging on the tumour. The subclavian artery, as it passes over the first rib, was so effectually compressed by Dr. Williams, that scarcely any blood was lost.

The patient is now doing well. On the 20th January, he had a discharge of bloody urine, which he attributed to the confined situation in which he had remained, on his back, and which had produced a severe pain in the loins. He seemed to attach but little importance to it, and in fact it soon ceased. Dr. Thorndike, who has charge of him, reports that he is rapidly recovering.

The tumour, on dissection, presented a lardaceous appearance, and, under the microscope, showed much fibrous tissue, in which, after much investigation, cancer cells were distinguished.

January 27, 1851.—Acephalous Female Fœtus. Presented by Dr. W. E. TOWNSEND.—The chief peculiarity connected with this case was the difficulty of determining the pregnancy of the mother. She has had three children before this, and reported that she had no one symptom of pregnancy that she had before experienced, except the non-appearance of the catamenia after the death of her last infant, and, as she had been before irregular, she did not attach much importance to that symptom.

During the whole period of gestation, she felt, at times, severe pain in her sides and back, had much suffering accompanying her discharges, and during the last three months obtained but little respite from pain day or night. No placental murmur could be heard, nor could the pulsations of the foetal heart be detected, and it was only after a careful vaginal examination that her condition could, with certainty, be discovered. She had no enlargement of the waist, the whole of the increase of size being below that part, and this varied greatly from day to day. At delivery, about two gallons of liquor amnii escaped; the foetus presented by the feet, and was still-born. The spine is bifid as far as the lumbar vertebræ, and the whole bears a very striking resemblance to a large bull-frog.

Jan. 27.—Microscopical Anatomy. Dr. O. W. HOLMES.—Dr. Holmes reminded the Society that he had, in the autumn of 1847, described and shown, at a meeting of the Society, certain new and hitherto undescribed bodies discovered by him in the cancellated structure of human bones. Several drawings of them were taken at the same time by Mr. McIlvaine of Philadelphia, then in Boston, which have been exhibited to the class during every course of lectures since that time.

These bodies have been lately described by M. Robin under the name of *medullary cells*. (See *Gaz. Méd.* for Dec. 22d, 1849, and *Am. Journal*

of the Medical Sciences for July, 1850.) He speaks of them as spherical or slightly polyhedric, transparent, with defined borders, and generally including a spherical, regular, transparent, sharply defined nucleus, with molecular granules between it and the cell wall. They are most abundant, he has remarked, in young subjects, and towards the end of the period of gestation.

There can be no doubt of the identity of these cells with those described and exhibited here two years previously to his publication. Several points may be added to his description. The nucleus, as Dr. Holmes has seen it, is of a remarkable yellow colour. In some instances he has found it containing a distinct nucleolus, in others there were two nuclei perfectly distinct, and in one cell lately noticed, there appeared to be four. The cells seem to be situated on the exterior of the bone, as they may sometimes be removed by repeated brushing with a camel's hair pencil. In size and general appearance, they are not unlike dried blood-corpuscles. They resist strong acetic acid and boiling water.

Dr. Holmes exhibited specimens of these bone-cells, which he proposed to investigate more completely hereafter.

He also showed the effect of polarized light in displaying the lamellated structure of bone, a circumstance not referred to in the works he has at hand, but of which he has for several years been in the habit of availing himself in his microscopic demonstrations.

Another point to which he called the attention of the Society, as illustrated in a specimen before them, was the *interrupted* form of the dentine tube, a form not shown by Mr. Tomes among the varieties he figures. The appearance is like that of a thermometer tube in which the mercury has become broken up into longer or shorter columns, or like what is often seen in the centre of a hair. The line of the tube shows an alternation of dark and light spaces, often very regular in size, the dark portions sometimes little more than mere dots, sometimes of considerable length. It can scarcely be doubted that this appearance is owing to the presence of an opaque deposit, natural or accidental, in a transparent tube, which it has imperfectly filled, in the same way that an unsuccessful injection partially fills an artery, and it may be considered another evidence of the tubular character of the dentine, if such were wanting.

ART. VI.—*Remarkable Obstetrical Cases.* By WILLIAM P. JOHNSTON, M. D., Professor of Obstetrics, &c., in the National Medical College, Washington, D. C. (With a wood-cut.)

CASE I. *A Male Infant weighing twenty pounds, delivered November 26th, 1848.*—Mrs. L., aged, at the date of her last confinement, thirty-eight years, was married at twenty, and has given birth to thirteen children at term. She is

above the average height of women; of large frame, corpulent, weighing probably two hundred pounds or more. I saw her for the first time during her last pregnancy, on the 9th of November, 1848: I found her suffering very much. Her abdomen was immensely distended, and tender to the touch. The lower limbs were exceedingly œdematous in their entire length. She complained of great stiffness about the hip-joints and knees, which, together with the weight of the abdomen, rendered locomotion very difficult. When lying in bed, it was impossible for her to move her lower limbs without assistance. Her breasts had not enlarged; her pulse was full and strong; tongue clean, red, and tender; acid eructations frequent. She ate but little, and without appetite.

A pint or more of blood was taken from the arm. She was ordered to take lime-water and milk, instead of tea and coffee. Diet to be very light, with very little animal food.

She was better after the bleeding, and she thought that the pain, stiffness, and œdema were somewhat relieved.

On Sunday, November 26th, 1848, at 5½ o'clock A. M., while standing, and without previous pain, the membranes gave way suddenly, with a report sufficiently loud to cause her husband to start from his sleep: the quantity of liquor amnii discharged was said to have been immense.

On my arrival, I found the head of the infant above the superior strait: the pains were feeble, and the os uteri dilated to the size of half a dollar; as the pains increased the os uteri dilated, and the head advanced very gradually in the first presentation. In the cavity of the pelvis, its progress was more rapid; but at the inferior strait there was some delay, notwithstanding the complete relaxation of the soft parts, and the strong bearing-down pains after the head had, with some difficulty, escaped: the infant, which was still alive, made several efforts to cry.

The greatest difficulty was now experienced, for the shoulders were so broad that it was impossible for delivery to be completed without causing one of them to descend at a time. Efforts were made to complete the rotation of the shoulders, and a finger was, with much difficulty, introduced into the left axilla, for which the blunt hook was soon substituted, and traction made in aid of the pains, which were still powerful.

A half hour, at least, was consumed before I succeeded in delivering the left arm. After some further delay, the right arm, which was under the pubis, was brought down.

Some difficulty was also experienced with the breech, but it was finally delivered in about three-quarters of an hour after the head. Unavailing efforts were made to resuscitate the child, which had died from the delay and pressure upon the cord.

The uterus contracted well, and in a short time the placenta was found lying loose in the vagina, and removed. There was but slight hemorrhage. The duration of labour was about eight hours.

In the evening I found her comfortable; after-pains not severe; pulse a little accelerated. There was a constant stillicidium of urine.

Nov. 27.—No fever; pulse 72; urine continues to be discharged in great abundance, and the oedema is rapidly disappearing. Lochia very small in quantity.

From this time convalescence advanced without interruption. There was no milk secreted.

Weight and dimensions of Mrs. L.'s infant, delivered Nov. 26, 1848:—

Weight of infant (male)	-	-	-	-	-	-	20 lbs. exactly.
Length	-	-	-	-	-	-	25 $\frac{1}{4}$ inches.
Breadth across the shoulders	-	-	-	-	-	-	8 $\frac{1}{2}$ "
" " hips	-	-	-	-	-	-	7 $\frac{3}{8}$ "
Circumference of thorax, under arms	-	-	-	-	-	-	16 $\frac{1}{4}$ "
" around hips	-	-	-	-	-	-	16 $\frac{1}{4}$ "

Head.

Occipito-mental diameter	-	-	-	-	-	-	6 $\frac{3}{4}$ "
" frontal "	-	-	-	-	-	-	5 $\frac{3}{4}$ "
Bi-parietal	-	-	-	-	-	-	4 $\frac{3}{4}$ "
Horizontal circumference of head	-	-	-	-	-	-	15 $\frac{3}{4}$ "
Circumference of head, around chin and middle anterior fontanelle	-	-	-	-	-	-	16 $\frac{1}{2}$ "
Placenta weighed	-	-	-	-	-	-	3 lbs.

Cord was of an extraordinary thickness.

Note.—It may be well to mention that the instrument used in weighing the infant was tested, at my request, by Messrs. Campbell & Coyle, hardware merchants, and pronounced correct.

CASE II. Separation of the entire Circumference of the Vaginal portion of the Cervix Uteri, from pressure of the Child's Head during Labour.—Mrs. D., from Ireland, æt. from thirty to thirty-five, of a strong muscular frame and sanguine temperament, was taken in labour with her first child on the 4th of November, 1845, about 12 M.

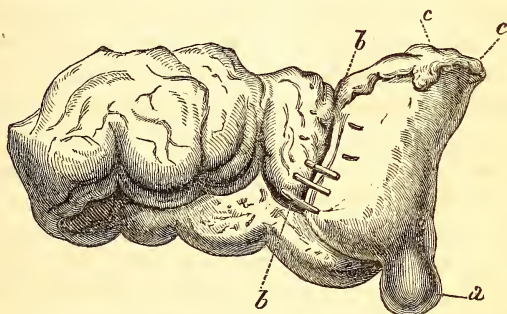
The os uteri, when first examined, was found dilated to the size of half a dollar, its edges were thin and hard, membranes somewhat protruding and tense. The anterior lip of the os presented a remarkable prolongation of an inch apparently.

The membranes soon ruptured, and the pains became more energetic. The os uteri and the vagina were nearly free from secretion. The pains became very strong and bearing down. There was frequent vomiting and insatiable thirst.

On the 5th, at 6 A. M. Found that the head of the child had descended, carrying before it the os uteri. The prolongation of the anterior lip was engorged, an inch in thickness, and presented in advance of the vestibulum.

Posteriorly the os uteri was thin, hard, and very rigid. Pulse full and strong; face flushed, and skin hot; vomiting persisting. She was bled from twenty to twenty-four ounces. In the course of the morning, a pint and a half of urine was drawn from the bladder by the aid of a gum-elastic catheter. The bleeding was repeated to the extent of a pint, and the extract of belladonna was applied to the os uteri.

At 10½ P. M., nearly thirty-five hours from the commencement of active labour, the pains having become still more energetic, the head was suddenly delivered, and upon examination it was found that a portion of the cervix had preceded it. Supposing at the moment that the laceration was only partial, I cut across that portion which presented with a pair of scissors; but in a moment after, the body of the child was delivered, when we ascertained that the separation had been nearly complete, the portion attached, and which had to be cut with the scissors, being only about half an inch long. The width of the separated cervix varied from an inch to an inch and a half. See figure.



Neck of Uterus separated during Labour (two-thirds natural size). [Drawn from a specimen preserved in spirit. Cabinet of Prof. Wm. P. Johnston, M. D., Washington, April 2d, 1848.] *a*. Prolongation of anterior lip. *b*. Stitches used to unite the parts severed by the scissors. *c, c*. Portion which remained attached to the womb after delivery of the child, and which had to be separated by the scissors.

The delivery of the child was followed by a gush of very offensive and partially coagulated blood. The placenta had separated before delivery, and was removed. The child was, of course, still-born.

On the 7th, the pulse was 84, skin pleasant, abdomen but little painful to the touch.

In the evening, the pulse rose to 102, and the abdomen became more tender. Ordered calomel gr. v, and Dover's powder gr. x; hop fomentations and an enema.

On the 8th, she was relieved, and convalescence fairly commenced. The lochia were natural.

In a few days, I ascertained that she had imprudently removed to another

house, feeling quite well. The catamenia soon returned, and she experienced no inconvenience from the accident she had sustained.

On the 10th of November, 1846, I went to inquire after the patient, whose case I have given above, when I found her with an infant in her arms of which she had been delivered about two weeks before. Her labour came on without any premonition, and in ten minutes, and before a messenger could be despatched for a physician, the child was delivered.

Her husband died before the birth of the second child, so that she has had no more, but she has enjoyed perfect health.

ART. VII.—*Hot Water in Sprains.* By SAMUEL JACKSON, M. D., formerly of Northumberland.

THE immediate application of cold water in sprains is strongly recommended by M. Baudens, in a paper quoted at p. 235 of the preceding No. of this Journal. As my practice, at least for the last thirty-four years, has been the very opposite of this, and has yet led to equally desirable results, I beg leave to relate it on the present favourable occasion.

I was riding past the house of one of my patients thirty-four years ago and heard the screams of anguish: a woman had just sprained her ankle and was then suffering intensely. I ordered the foot to be put into water as hot as she could bear it and to be retained there until I should return—hot water to be added as the first became cool. In about an hour, I found that the pain had diminished almost from the very first minute, and that it was then entirely gone. She was put to bed with the foot greatly elevated, and after some hours, though there was no pain, towels dipped in cold water were freely applied and continued for several days. She was then perfectly well nor did she ever again suffer from that sprain.

Another strong case within my clear recollection is the following. A man sprained his ankle and suffered such severity of pain as to make him cry out most lustily. I was present in a few minutes and put his foot into hot water, immediately bleeding him largely from the arm as he sat in his chair bathing his foot. The pain became rapidly milder and I went into the next room to drink some tea. Looking over my shoulder after a few minutes, I saw his friends employed in fanning him and sprinkling his face with cold water. I ran to him, when to my horror, he was, as to human eyes, a mere corpse. I instantly tilted his chair, laying him flat on his back and ordered them to elevate his legs. Cold sprinkling and spirits of ammonia now most fortunately in my pocket, were most diligently used, but it was an alarming time before he was restored. He was now put to bed entirely free from pain and the

next day he pursued his journey in the stage without any inconvenience, having a flannel bandage applied.

This man told me he had no idiosyncrasy with respect to losing blood; he was large, vigorous and healthy; hence the bleeding did not produce this alarming crisis. It was in a great measure the flaccidity of body and mind effected by a sudden transition from extreme suffering to perfect ease; though it must be apparent that the bleeding and bathing worked together so powerfully as to require more careful watching in any future case.

I once suffered a violent contusion of my elbow followed by intense pain: the arm was immediately put into a tub of hot water when it soon became entirely easy, requiring nothing further except rest. I have treated many other sprains and contusions in this way and I do not recollect a single case wherein the hot water failed of giving surprising relief.

I had been prepared for trying this method by reflections on the great comfort of warm bathing in many cases of conjunctivitis, before any considerable *error loci* had yet been formed; and on the fact, that in general relaxation of the system, there is less pain from parturition or any other violence.

How long that state of the part which is benefited by hot water, may generally continue after the accident, can hardly be defined. I have no recollection of using this remedy after a lapse of two hours, but I cannot be prepared of course to define the limits. If there has been time for inflammation to form, heat is inadmissible on my principle. Sometimes a tumour will instantly rise, but this being without inflammation, there can be no objection to the hot water.

It is very desirable to ascertain the best methods of refrigeration. M. Baudens keeps the foot night and day in a tub of cold water—a very inappropriate and inconvenient practice, if I am not greatly mistaken, for it prevents the proper position of the limb, which ought to be much elevated and evenly so from the acetabulum to the foot. Towels dipped in ice water and spread over the limb and bladders of snow or of pounded ice so placed that their weight may be supported by the pillows, are very conveniently applied. Ice or snow is particularly useful through the night when nurses and patients are sleepy and heat is sure to accumulate. A certain medium however must be observed with respect to the degree of cold, for it may easily be overdone unless the heat be great.

Suppose then a violent sprain has been relieved of all pain by hot water, let no one look upon the danger as past. The patient ought to be placed in bed with his foot greatly elevated, and after a few hours, cold ought to be applied even if the part is entirely easy. Inflammation may form, let us then prevent what every one knows is hard to cure in such parts. I have often seen lead water used and B. Bell has confidence in this and natural mineral waters, but truly I cannot believe they have any superiority over the pure fluid.

Low diet from the very first must be used in every case and purging too

when the system will bear it; but if the patient is robust, he should lose blood from the arm. So much for the prevention of inflammation. I should not say a word about its cure had not M. Baudens advanced something bordering on novelty. He seems to have a horror of leeches because they may attract blood to the part. Now if the general arterial action has been lowered and the leg kept elevated, this horror need not be entertained. This we think would be the decision of a great majority of the profession in the present case. If I were called to a sprained ankle already in a state of severe inflammation I should certainly, after bleeding from the arm if necessary, apply an abundance of leeches and follow them up by cold, the limb being greatly elevated. B. Bell says, "No remedies I have ever employed answer so well as local bleeding:" and in the same page he further says, "When the injury has been severe we are obliged to apply leeches once and again. They require indeed to be repeated from time to time as long as any serious degree of pain continues."

After an indefinite time when all tendency to active spreading inflammation has been subdued and the little that is left is very feeble or confined to a small space, a very active large blister will generally absorb and carry it forthwith out of the body, but this is a perilous experiment and may do much harm if it do not fulfil our intention of extinguishing at once the whole disease, or of subduing it so far as to prevent reaction and thus to favour the operation of a second blistering. Whenever it has been determined to use this remedy, the part ought to be rubbed for fifteen minutes with *decoct. canthar. ex terebinth.* and an active plaster applied, so as to draw an effectual blister in the shortest time possible. The quick drawing of the blister is a point of the first importance in cases wherein you hope to absorb and carry off the whole disease. A slow blister is worse than none; it is sure to irritate and increase the disease as sinapisms are known to do in similar cases. You are taken with pleurisy or peritonitis—some physicians would apply mustard with the hope of discussing a disease that is yet mild; but *væ vobis*, you must lose more blood on account of the mustard and resort to a blister in the end. The best dressing by far for the first few days, is plantain or cabbage leaves; but if the blister promise to run freely and not inflame, it may be soon dressed with mezereon or savin cerate, and if a copious discharge of pus be obtained, the disease will rapidly pass away. I can never forget the delighted countenance and applauding language of an old physician to whom I showed in my first year's practice, an ankle in this very condition. He had never known this use of savin, but from that day he used it freely and praised it highly. I had learned it from Crowther's work on white swellings.

Beware of warm poultices in the dressing of these blisters, for, as M. Baudens rightly says, "they favour in place of opposing the afflux of fluids to the part," and speaking of the long application of warm cataplasms, he says, "The long maceration the joint has been submitted to, deprives it of its elas-

ticity, gives rise to a pasty engorgement and predisposes to the formation of white swelling." If it is determined not to use savin, the blister should be healed by the mildest dressings, so that another may be soon drawn; thus the blistering may be conducted without any injurious irritation and made to absorb gradually and to carry off gently all the remaining inflammation. Dr. Rush used to talk and lecture much on his blistering point, and truly no idea or language can be more appropriate. The inflammation must be brought down to a low grade of action, or to a small periphery, so that a suitable blister will extinguish it at once, or so greatly diminish it that one or more subsequent blisters may be drawn with safety and success.

Of so much importance is it to guard against the irritation of blisters, that when I have applied them in the evening for critical diseases admitting of no delay, I have risen from my bed to bleed the patient if necessary at the time the plaster might begin to stimulate. When practicing in Northumberland, I have thus gone from one mile to four between midnight and morning to subdue the possible increase of fever either by the lancet or by additional doses of tartar emetic. By this means the evils of blistering may often be prevented; but as Hippocrates says, "the opportunity is fleeting:" if you wait till morning the pulse may be higher than it was in the evening and of course the blister has done much harm and no good. Sir John Pringle, in that early dawn of therapeutics, was better acquainted with this principle than many later authors in more enlightened times. *See Part III. ch. ii.* In the treatment of pleurisy when the bleeder was not present, he put on a blister and "was satisfied if the vein was opened before the flies had time to stimulate." I must observe however that his principle of practice was more commendable than the practice itself. More mischief can hardly be done by any remedy than by the drawing of a blister before the inflammation has been reduced to the blistering point. In Sir John's practice, the pain may have been scattered, but the inflammatory state remained and bleedings were then required which ought to have preceded the blister. It is very possible that when bleeding is inadmissible, nauseating doses of tart. emet. might be used to relax the system under the stimulation of a blister.

We have already entered our caveat against warm poultices in the dressing of blisters for sprains, and have approved M. Baudens' doctrine with respect to them; and lest any one should retort that our hot water may have the same bad effect, we must remind him, that we explode warmth after inflammation is formed. You may bathe a healthy limb in hot water for twenty-four hours and no engorgement will follow. I have bathed a great many sprained joints in the hottest water that could be borne without any of this evil. It is pain and inflammation that induce this engorgement, and these being both prevented by the hot bathing, this dreaded evil is prevented of course. But let this engorgement accrue and it will be greatly increased by much heat in any form. Yet there may be old cases in which hot water or steam may appear to revivify the torpid parts and render them sensible to

curative means. But suppose you are called to an old case of this leucophlegmatic torpidity, is there a better remedy than frequent blistering that discharges freely? B. Bell recommends the pouring of warm bath or Buxton water on these engorged and torpid joints, but there is far more vivacity in the operation of cantharides, and the discharge not only carries off the evil stimulation, but it empties the vessels and promotes absorption.

Salivation is a last resort in certain protracted cases of sprains. I was called to a case wherein the metatarsal ligaments had been sprained twelve months before and the patient was now unable to walk on that limb. Rest, elevation of the leg, low diet, frequent cupping, and blistering were steadily pursued for nine months with much advantage; but there remained a painful state of the parts that prevented all use of them, and this without any evident swelling. Having reflected on the all-searching influence of mercury when parts supplied with infinitesimal vessels are inflamed as the iris, ligaments, and serous membranes, I determined to try its effects on the inflamed metatarsus. Calomel with blue pill was given and no sooner was the mouth sore than my afflicted patient felt with joy that his foot was greatly relieved. The change for the better was instantaneous and permanent. He was severely salivated but without any detriment; and I am glad to say that mercury in my hands has not since that time, thirty-one years ago, transcended its just operation in a single case, and that I consider it as an invaluable remedy not difficult to manage. It will cure chronic rheumatism, why not therefore a chronic sprain? But as I am not writing a treatise on sprains, I shall now return to my subject.

In nearly all cases of external violence which do not implicate any of the viscera, the immediate use of hot water is, as I sincerely believe, the best as it is the surest cure and preventive of pain. If you are about to have a tooth extracted, hold hot water in your mouth both before and after the operation: if you must have a felon lanced, hold the hand in hot water for a long time both before and after the cutting. My first case of what is vulgarly called "inverted toe nail" occurred to me after the patient had thoroughly relaxed the part by warm poulticing for many days, and I did not proceed to the operation of splitting the nail and eradicating the offending portion, till he had bathed his foot a long time in hot water. I had been taught in Dorsey's Surgery that it was a most painful operation and I was therefore surprised, notwithstanding my hopes from the relaxation, to find the young man making very little complaint. I have several times performed this operation and owing as I believe to the hot bathing, I have not found it severe in a single case.

Now if I am not mistaken some reader will here exclaim, that even in inflammation, warm water agrees with some persons and cold with others. This fact however, I learned when a student from S. Cooper's prize essay on "Diseases of the Joints:" but however true this may be, I have not found

a single case of bruise or strain in which hot water, when used in time, was not a great present comfort and permanent benefit.

When can I use the limb, is the continued cry of the patient and the continual anxiety of the harassed doctor. Some men have been known to walk off the inflammation as others have been known to walk off the gout, but this is a very dangerous experiment. I once sprained my metatarsus, but as the pain was not intolerable, I rode abroad without any application; on my return, I went to bed with the remittent fever and the pain was soon gone and forgotten. When I came to use the limb after two weeks, it became painful; but as the bilious fever prevailed greatly, I had no time to think of self and nothing was done unless some rubbing with liniment. When the cold weather set in, the pain subsided gradually; but the warm weather of spring brought it back with distressing debility in the part. Thus going in the fall and coming in the summer, this infirmity continued to trouble me for four years. My limb was weak and painful every summer but not so bad as to send me to bed for a cure. I have seen many people triumph over the poor doctor by limping over the earth in great pain till nature cured the disease; but such wayward spirits always pay dearly for their folly, and they are sometimes finally brought to a bed of repentance.

ART. VIII.—*Report on Idiotic Crania, Idiocy, and Cretinism.* By SAMUEL KNEELAND, JR., M. D., Boston. Read before the Boston Society for Medical Improvement, Jan. 13, 1851.

BEFORE examining minutely the subject of idiocy, it is difficult to understand the extreme differences and inconsistencies of authors who have made it a special study, and the almost impossibility of arriving at any conclusions on the subject. The divisions and subdivisions of the various forms of idiocy are innumerable; varying according to each author's appreciation of the mental, moral, and physical phenomena presented. An enumeration, even, of the different systems would only confuse and perplex. A simple division may therefore be adopted, which, if inadmissible as a strictly scientific and accurate system, will suggest the most important considerations connected with idiocy.

Without going into particulars, we notice at once a great division of idiots into idiots from birth, and idiots from various causes subsequent to birth. In the first, or *congenital* idiocy, there is an arrest of cerebral development in the fœtus, indicated by a too small brain and by the external development

and form of the anterior portions of the cranium; in the second, or acquired, *secondary* idiocy, the diminution or abolition of the mental powers depends on disorganization or disease in a previously normal and healthy brain, and may or may not be accompanied with change in the size and form of the cranium; this disease may be hydrocephalus, scrofulous hypertrophy, exhaustion from venereal excesses, hard study, &c., and various mechanical injuries. To the first class, we restrict the name of *idiots*, or what are expressed in the phrase "natural fools." To the second class, wherever idiocy is secondary, may be given, for want of a better, the name "*cretin*"—a term erroneously confined by many to a few miserable creatures in the Alpine and other mountain valleys. "Among their number, may be ranked" (in the words of Dr. Buckminster Brown) "the numerous individuals who are to be found scattered over every country, and who, under various names, such as innocents, simpletons, or idiots, are to be met with in the valleys of Vermont, New Hampshire, or Scotland, as well as Switzerland." Among the great class of cretins, we perceive also a natural division, according to the nature of the predisposing causes, into two orders: 1st. *Cretins*, or "fools," properly so called, in whom, while the brain is healthy at birth, there is some hereditary disease, as scrofula, syphilis, or other cause of weakness, which predisposes to idiocy during childhood, and which is frequently followed by it when external circumstances favor its development; this would include "cretins" from endemic causes in the valleys of mountainous districts, from hydrocephalus, or other chronic cerebral affections. 2d. Persons often seen in insane asylums, in whom the understanding is completely lost, without passing through insanity; whose minds were once strong, but have been destroyed by various excesses; to use an expression in Dr. Howe's Report, they are "demented."

Dr. Brown gives the following distinction between idiocy and cretinism: "In the latter, it is disease in the framework, it is the external avenues which are closed; in the former (idiocy), it is almost unchangeable mental conformation. Or, more properly speaking, in the latter (cretinism) it is an altered condition of the nerves, sensitive and motor, and of their peripheral ramifications; in the former (idiocy), it is to the great nervous centre alone that the evil is to be traced." He thus makes the pathological condition the element of difference; while we consider rather the nature of the causes as constituting the difference. These causes, congenital or secondary, may, we think, produce idiocy or cretinism, without reference to the pathological seat; in other words, that, though in idiocy the evil is seated in the great nervous centre (the brain), in cretinism this same nervous centre may be equally affected. It would seem, also, that the distinction by the causes offers better indications for prognosis and treatment than any difference in the pathological condition; as in the congenital affection, whether seated in the brain or in the nerves and framework, the prognosis would be unfavourable, and treatment probably useless; while in the secondary affection, where the cause is more generally appreciable, treatment will be more likely to be of advantage.

It is not easy to say much on the subject of idiocy without entering the domain of phrenology. However much we may affect to ridicule the idea that small heads are absolute indications of inferior intellect, we cannot deny a connection between the *relative* size of certain parts of the brain and the *degree* of manifestation of the intellectual, moral, and animal sentiments. In idiots, the forehead is unusually low, and the intellect proportionably dull, corresponding to the arrest of development of the *anterior* cerebral lobes.—In idiocy, there is no one peculiar form to the exclusion of others; there is every variety of intellectual and moral inferiority, which phrenology traces to a corresponding deficiency of brain. At any rate, Gall, Combe, and Spurzheim have added a great deal to our knowledge of mental affections, their causes, symptoms, pathology, and treatment.

There can be no doubt that deficient cerebral development is a cause of idiocy, independent of any actual disease. Numerous examples are given by authors of full-grown idiots with brains no larger than those of infants, with no other mark of disease about them. The predisposing cause must act during gestation—idiocy may be hereditary; children of besotted parents are very apt to be idiotic. Of this it is needless to quote examples, as the records of idiocy are full of striking proofs of this visiting on the children the sin of their parents. Various shocks to the nervous system of the mother have been known to cause idiocy: thus, Esquirol mentions that, during the exciting period of the French Revolution, many women brought forth idiotic children, who before and after that period had healthy ones. The intermarriage of near relatives is very apt to be followed by idiotic children. In 359 cases alluded to by Dr. S. G. Howe, in his State Report, 17 were *known* to be the children of parents nearly related by blood, and doubtless many more should be added. This makes (so far as such few cases go) the proportion of idiots from this cause one-eighteenth of the whole; and, considering the small ratio such marriages bear to the great mass of marriages, this proportion becomes of more importance. In this report, it is said: "Most of the parents were intemperate or scrofulous; some were both the one and the other; of course there were other causes to increase chances of infirm offspring, besides that of the intermarriage. There were born unto them 95 children, of whom 44 were idiotic, 12 others were scrofulous and puny, one was deaf, and one was a dwarf. In some cases, all the children were either idiotic or very scrofulous and puny. In one family of eight children, five were idiotic."

Idiocy (as has just been defined), being congenital, cannot be said to have any *exciting* causes, or rather these are the same as the *predisposing*. In all the forms of cretinism, in addition to the predisposing causes of idiocy acting on the mother during gestation, there are various exciting causes; as, endemic influences of mountain valleys, improper lactation, accidents of dentition, convulsions, grave diseases of infancy and childhood, falls on the head, &c., acting on a brain prone to derangement from hereditary causes of weakness.

In after life, a vicious system of education, a life of excess, may cause "dementia" in a perfectly developed brain. It has been said that continued compression of the child's head during labour may cause idiocy; and that any subsequent improper compression may have the same effect. This may be true as regards infants; but there are many facts against the latter. We know, for instance, that the artificial compression exercised by many nations (as the ancient Peruvians, the Natchez Indians, &c.), though distorting the cranium to a great degree, does not cause idiocy. The Peruvian forehead is as flat as the idiot's; but this *imitation* of nature is not followed by the natural consequence, idiocy.

According to the best authority, the number of idiots and cretins in Massachusetts must be at least 1200, in a population of one million, or about one in every 830 individuals.

There is no one peculiar form of idiotism, or cretinism. There is every variety and gradation, from the most degraded brutish idiot to the imbecile with a feeble, yet perceptible, intellect. It would be useless and tedious to give here anything like a full account of the different *symptoms*. It will be sufficient to allude to the stupid physiognomy, inability or indisposition to move, deformity, dullness or abolition of the senses, inability to articulate, involuntary discharges, insufficient and sluggish circulation, in idiots proper; and, in the various forms of cretinism (in many cases apparently synonymous with rachitis, scrofula, epilepsy, hydrocephalus), to the distorted features, convulsive movements, disgusting habits, depending on the activity of certain instincts unrestrained by moral or intellectual principles. In this class must be placed those whose idiocy depends on congenital absence of certain senses, which Broussais thought justified him in saying that persons born blind and deaf are necessarily idiots. But numerous exceptions show that the absence of these senses is not incompatible with considerable intellectual powers: the case of Laura Bridgman need only be mentioned to prove this.

Cretins and idiots usually have the animal and instinctive propensities active, even when there appears no spark of reason or human sentiment; but to these may be added various faculties, as memory, order, disposition to destroy, secrete, or steal. Some have considerable mechanical talent, *e. g.*, the cretins employed at Geneva in making parts of watches; some are gentle and affectionate, others the opposite; some have the organic functions perfect, others not. Dr. Rush says, "I once saw a man who discovered no one mark of reason, and yet possessed the moral sense and faculty in so high a degree that he spent his whole life in acts of benevolence."

This will suffice for the symptoms proper of idiocy and cretinism; but a curious fact may be here introduced in regard to the diseases of this class of persons, viz., that they are accompanied with very little reaction, and are very difficult to diagnosticate from the absence of the classical symptoms: in inflammation of the lungs, for instance, the circulation and respiration are very

little, if at all, accelerated; rusty sputa either do not exist, or they are swallowed as by children; all their diseases seem to take on the chronic and latent form; acute affections and cerebral inflammations rarely terminate their lives, and the gravest accidents and dangerous wounds are borne without any great constitutional disturbance.

It is the opinion of many authors that cretinism is one of the many forms in which the scrofulous diathesis shows itself; and certainly the external signs of the so-called "lymphatic temperament," the complexion, features, proportions, &c., are strongly in favour of this view. In idiots proper, the nature of their affection must be attributed rather to an arrest of development than to any constitutional disease, though upon true idiots may be found marks of scrofula. As any well-ascertained connection between cretinism and other disease is important as regards treatment, the relation of rachitis to cretinism may be here mentioned. In the "Dictionary of Medical Sciences" of Berlin (according to Mr. Güggenbuhl's First Report, pp. 47-8) it is said that autopsies of cretins prove that their cranial bones have undergone a softening similar to that found in rachitis, and evident marks of this disease have been found in other parts of the skeleton; the symptoms from the beginning are similar, but not precisely alike, in cretinism and rachitis. Without admitting absolute identity, the authors think that the differences depend on this, "that cretinism, taking its departure from the cranium and brain, soon attacks the physical and intellectual powers; while rickets, commencing in the trunk and the extremities, may make great progress before exciting any grave trouble in the system." A careful examination made by the physicians of the Canton Vallais, in Switzerland, has shown (according to the above report) that at least one-half of the cases of cretinism there commence by the symptoms of rachitis, principally softening of the bones. According to Esquirol, and others since his time, cretinism is usually developed between the second and fifth years, and almost never after seven years of age.

The pathological anatomy of idiocy and cretinism presents very various conditions. In true congenital idiocy, we find a brain (healthy perhaps) too small for the full manifestation of the moral and intellectual faculties; there is an arrest of development of the anterior and middle portions, corresponding to the seats of these faculties as given by phrenologists.

This deficiency in the anterior region of the skull is well shown by the series of casts and crania exhibited in the following tables. Measurements have been carefully taken in three directions, which will be compared with normal heads, in order to sustain the exactness of Dr. Gall's law in reference to the dimensions of the skull necessary for the full exercise of the faculties.

TABLE I.—*Idiots.*

Sex.	Age.	1st measurement.	2d measurement.	3d measurement.	Where found.	No.
Male,	25	15 inches.	10 inches.	9 inches.	No. 407, Mass. Med. Col.	1
Female,	17	15 "	10 "	10 "	No. 406 " " "	2
"	60	18 "	11 "	10 "	No. 89 " " "	3
Male,	Adult,	18 "	10 "	10½ "	No. 89 " " "	4
"	"	18 "	11 "	11 "	No. 90 " " "	5
Female,	"	18 "	10¾ "	10½ "	No. 91 " " "	6
"	"	18¼ "	10 "	11 "	No. 92 " " "	7
"	"	17½ "	10½ "	10 "	No. 93 " " "	8
—	?	14 "	8½ "	8¾ "	No. 94 " " "	9
—	6	14 "	8¾ "	8¾ "	No. 96 ^a " " "	10
—	21	14½ "	9 "	9 "	No. 96 ^b " " "	11
S. Walker,	6	—	10⅛ "	10½ "	Dr. Howe's Report.	12
G. Rowell,	9	14 ⁹ / ₁₀ "	10½ "	10½ "	" " "	13
E. S. Field,	7	17 "	11¾ "	11 ¹ / ₁₀ "	" " "	14
Charles,	16	16 "	8 "	9 "	Institution at S. Boston.	15
Rowell girl,	8	15½ "	10¼ "	10½ "	" " "	16
Aztec boy,	7	12 "	7½ "	7½ "	Described by Dr. Warren,	17
Aztec girl,	5	12 "	7½ "	7½ "	p. 285 et seq. of this No.	18

The first measurement is the circumference of the cranium just above the superciliary ridges, passing through the most prominent part of the occiput; the second is from the root of the nose to the occipital protuberance, over the top of the head; the third is from one auditory meatus to the other, also over the top of the skull. Dr. Gall has laid down the rule that when the first is less than seventeen inches, and the second less than eleven inches, or even twelve, there is always greater or less stupidity; that, when the first is eleven to thirteen inches, and the second eight or nine, the intellectual faculties cannot be exercised. With reference to this point, Andral, as quoted by Dr. Combe (on *Insanity*, p. 264), says: "As a general rule, it may be stated, also, that, when the circumference of the head is only between twelve and fifteen inches, the mental condition can be but little above idiocy. Eighteen inches may be regarded as the circumference necessary for intelligence; at twenty, the mental faculties are still more developed; and from twenty to twenty-two inches, they attain their maximum power."

Eleven of the above eighteen idiots are doubtless adults; or, if not, it is of little consequence, as it will be seen in the next table that these measurements are less than the normal measurements of a child four years old. For the first (the circumference) the smallest is 14 inches (with the exception of the Aztec children), and the largest 18¼—all below the size necessary for much intelligence; the second varies from 8¼ to 11¾ inches; and the third from 8¼ to 11¼.

It may be well to glance here at some of the most prominent points exhibited by these casts and crania of idiots, which, to one conversant with phrenology, would suggest many very interesting questions. All show a preponderance of the animal propensities, some of one kind, some of another. Nos. 1 and 2 were noted for pride, self-esteem, and combativeness. No. 3, a

woman sixty years old, who during her youth had the cerebellum active, had sufficient locality to wander from home and find her way back again; she was very fond of colours, and submitted to be cast on receiving a gaudy-coloured shawl. Nos. 4 to 8, inclusive, were members of one family, all of whom, seven in number, were idiots; their parents were frequently in a beastly state of intoxication. Nos. 5, 6, 7, and 8, so far as the relative size of the various regions of the skull was concerned, had phrenologically good heads, but their absolute size was too small for intelligence. Nos. 9 and 10 approximate very nearly to the orang outang, as will be seen by reference to the second table. No. 10, the famous idiot of Suabia, six years old, by the flat forehead, vertex, and occiput, and prominent features, resembles much the so-called Aztec children, of whom we have given the measurements in Nos. 17 and 18. No. 11, the idiot of St. Denis, is of good shape, but of remarkable smallness, considering the subject was twenty-one years old. Nos. 13 and 16 are brother and sister, and are interesting as showing one of the causes of idiocy, viz., intemperance in the parents. On the authority of Mr. Richards, we may state that the parents of these children have had healthy and normal offspring at periods of their lives when intemperance was not their prominent vice, and that, too, both before and since the birth of these, who were born while their parents were addicted to strong drink. No. 16 also has club-foot. No. 15, lately received at South Boston, is a most curious-looking idiot; sixteen years of age, of large frame and great strength, his broad shoulders surmounted by a small head covered with bristly red hair; his lower extremities are weak, and his gait shuffling; the circulation is very languid, as it generally is in idiots, indicated by the lividity and coldness of the lips and hands; his violent gestures and uncouth noises have been considerably modified by kind treatment during his stay of only a few weeks. Of the Aztec children we shall speak below.

TABLE II.

	1st measure.	2d measure.	3d measure.	Where found.	No.
Average skull,	21 inches.	12½ inches.	12½ inches.		19
Carib skull,	21½ "	12 "	12 "	No. 359, Medical College.	20
Child 5 years old,	18½ "	12 "	12½ "	Nat. Hist. Society.	21
" 4 " "	18½ "	11½ "	12½ "	" " "	22
" 3 " "	18 "	11¼ "	12 "	" " "	23
" 2 " "	17½ "	12 "	12¾ "	" " "	24
" 1 " "	17½ "	11¼ "	12¼ "	" " "	25
" at birth,	12¾ "	8 "	8 "	" " "	26
Orang Outang,	13½ "	8 "	8½ "	No. 97, Medical College.	27

From these tables, it will be perceived that all the idiots had skulls too small for a brain sufficient for a full manifestation of the intellectual powers; that they had skulls smaller than an average child of five years of age; that two, one adult and the other seven years old, had skulls inferior to a child two years old; that six were inferior to a child one year old in measurements,

though the ages ranged from six to twenty-one years; that four were not above the new-born child as regards cerebral development; that a diminution of three inches in the first measurement, and one to two inches in the second and third measurements, is almost sure to be followed by greater or less imbecility. In the second table, by comparing the flattened Carib skull with an average skull, we see that, though the form is changed, and the forehead much flattened, the capacity of the cranium is unchanged; showing that distortion is no indication necessarily of imbecility, unless confirmed by actual measurement. There would, perhaps, be a difference of half an inch in different specimens of skulls of children; but a single average specimen is sufficient to show the inferiority of the idiot skull.

We see, then, that below a certain size of the brain, there is idiocy; and we also see that the actual size of idiotic brains varies. An idiot with a small brain (*e. g.* No. 13) may be superior to one with a larger brain (*e. g.* No. 14); in both, idiocy arises from a too small brain: but why should the smaller be the better brain? It is due to the different conditions of the bodily organization, or *temperament*. Dr. Howe, speaking of these two boys in his report, says: "The first named boy, whose head is so much smaller than the second, and, indeed, than any boy in the school, and who has such a striking resemblance to the ape tribe, manifests much more vivacity, activity, and intelligence than the second, and, indeed, than several of the others—and precisely for the reason that the man of 'blood,' or fine temperament, is superior in these respects to the man of coarse organization—though his brain may be smaller. The boy's body is of a much finer organization, and his brain, doubtless, is so likewise."—p. 57.

The deformity of idiot crania affects principally the anterior and superior portions; while the parts destined for the animal propensities and instincts are well developed. This we should expect from an arrest of development; as it is admitted that, when the growth of the brain is natural, the anterior portions are hardly formed at a time when the convolutions of the other regions are comparatively well developed—showing the order and preference of nature in forming first the portions destined for the vegetative functions.

The fact that in idiots the animal, instinctive, and emotional sensations are usually active, is interesting in connection with certain views regarding the physiology of the brain that have of late years been generally received. At the base of the brain, distinct from the cerebral hemispheres and the cerebellum, is a series of ganglia, which have been called "sensory ganglia:" these are the corpora striata and the thalami optici; and the olfactive, optic, and auditory ganglia, which do not interest us at present. Though these have commonly been considered as mere appendages to the hemispheres, Carpenter maintains that they have an independent character, from the large quantity of vesicular matter they contain, and have special functions assigned to them. As we descend in the animal scale, we find these ganglia increasing at the expense of the cerebral hemispheres; we also in the same ratio find a

less and less display of intelligence and will, and a greater predominance of the motions arising from instinct, that is, without any adaptation of means to ends. As in animals, so in man; in proportion as the reasoning powers are deficient (for it cannot be doubted that animals have a kind of intellect comparable with the reason of man), the instinctive impulses become stronger. As in the lower animals, so in the human idiot, the instinctive impulses, situated in these sensory ganglia, are strong, for his preservation from danger, and the supply of his necessary wants; though, in this respect inferior to the animal, the human idiot, from want of power over the nerves and muscles, cannot always supply even his simplest wants. In these sensory ganglia is the seat of the instincts of animals, and the corresponding emotional actions in man: to the *thalami optici* as the focus of *sensation*, and from the *corpora striata* as the focus of *motion*, go the nerves which communicate the sensations, and the nerves which excite the motions, of instinctive and emotional actions. These actions being generally the most marked in idiots, we should expect to find these ganglia well developed in this class—not necessarily enlarged; as, if they were of the natural size only, they would undoubtedly be more active in proportion to the deficiency of the cerebral hemispheres. Whether pathological anatomy has decided this point, we are unable to say.

Phrenology has always claimed a peculiar connection between the cerebellum and the *genital* system, and has adduced the frequent, perhaps general, activity of these functions in idiots in support of this view. Dr. Carpenter states that the weight of testimony, from comparative anatomy, experimental physiology and pathology, is decided in regard to the connection of the cerebellum with the regulation of the *motor* function; though he does not totally deny the opinion of Dr. Gall. He adds, "It would seem by no means improbable that the lobes are specially connected with the regulation and co-ordination of movements; whilst the vermiform processes, which are very large in many animals in which the former scarcely present themselves, are the parts connected with the sexual function."

There is in idiocy an apparent contradiction as far as the cerebellum is concerned, inasmuch as there are frequently in the idiot strong sexual propensities, with a great want of order and control in the voluntary movements, and *vice versâ*. To explain this would require a combination, to say the least, of the phrenological doctrine with the views of Carpenter and others—and perhaps the entire separation of the sexual functions from the cerebellum.

It has been already seen that the idiot of Suabia (six years old) resembled very nearly, in shape and proportion of the skull, the Aztec children; and the phenomena of idiocy have now been sufficiently detailed to enable us to say why and to what extent these children are idiots. The measurements of the Suabian head are 14, $8\frac{1}{4}$, and $8\frac{1}{4}$ inches; the Aztecs have heads as small as new-born children, viz., 12, $7\frac{1}{2}$ and $7\frac{1}{2}$ inches, considerably smaller than the Suabian head. These children are now known to be dwarf specimens of a

Central American race of Indians, such as may occur in any race; though no dwarfs on record have equalled these in the smallness of their crania. The brain seems merely too small, without any great disproportion in any of its parts; though, as usual, there is a relative inferiority of the anterior lobes, which may partly be accounted for by external circumstances with them favouring the development and exercise of the animal functions more than the intellectual. It is almost a harmonious want of development (if the expression be allowable), which gives them more the appearance of men in miniature than of idiots, though from the dwarfed condition of their brains they are necessarily partial idiots. The prominence of their features, though considerable, is exaggerated by their retreating foreheads; their bodies and extremities are well formed; they have good command over their muscles, and are quite agile, being continually in motion, differing in this respect from the majority of idiots. They certainly articulate words, and make a variety of animal-like noises, expressive of their wants, of anger, of joy, of surprise, and of other feelings, which imply considerable intelligence. They understand speech in others to a certain extent, as they obey like a little child; so that, as regards speech, as much seems to depend on an abnormal condition of the vocal organs, or the nerves supplying them, as on any intellectual defect. The senses are acute, especially sight and hearing; they are very attentive and curious, eagerly examining every new object. They in part feed themselves, and can chew solid food; they are decent in their habits, affectionate towards each other and to strangers; and they manifest desires and a degree of knowledge which place them high in the class of idiots, if not quite above them. The fact that the boy drivels, so characteristic of idiocy as to have become a byword, loses some of its significance when it is known that he is undergoing the process of his second dentition. Though they are dwarfs and idiots, yet they cannot be placed in the lowest classes; they exhibit such evident signs of intelligence, and are wanting in so many of the usual symptoms of idiocy, that we have little doubt that a judicious system of education would enable them to take a much higher rank among human beings than they now occupy.

Idiocy is, then, the inevitable result of a brain under certain dimensions. There are various lesions mentioned by authors as found in idiotic brains; among others, the small number and flatness of the convolutions of the cerebrum and cerebellum generally. Solly quotes from Breschet the case of a girl, fifteen years of age, in a complete state of idiocy, in whom the two anterior lobes of the brain were wanting; at the bottom of and behind the membranous pouch which replaced them, the corpora striata were seen exposed. In some cases, the brain seems hypertrophied; in others atrophied, with narrowness of the ventricles, so much insisted on by Esquirol; the convolutions may be found hardened, irregular, and discoloured, which Rostan thinks the result of softening followed by absorption: these lesions sometimes reach the optic thalami, the corpora striata, and the corpus callosum, and must have

depended on arrest of development or intra-uterine disease of the brain, as they would soon have proved fatal if arising after birth.

Spurzheim says, "The brain of an idiot never resembles that of a sane person. Its form or texture is different." Even when the skull is well formed, as it is in many idiots from birth, the brain may be very small, and the interval be made up by a thickening of the bones. He mentions the skull of an idiot boy, which was three-fourths of an inch thick. The atrophy of the brain is usually accompanied by the atrophy of the extremities. An idiot examined by Esquirol presented the following symptoms, mentioned in Spurzheim's work on *Insanity* (pp. 243-4). The limbs of the right side were greatly atrophied, shorter than the left, and incapable of movement; the limbs of the left side were natural, and capable of voluntary motions; the head was small, but not deformed. On opening it, nearly all the gray cortical substance on both hemispheres was found wanting; instead of convolutions, there were only small irregular granulations; in regard to the white substance, that of the right hemisphere was natural, but in the left it was almost entirely wanting, being occupied by a sac of transparent fluid. This case has an interesting physiological bearing, as showing that the gray substance is not essential to voluntary motion, but is, as Sir C. Bell supposed, the seat of the intellect.

The pathological anatomy of "cretinism," by which is here understood any idiotic condition from causes subsequent to birth, must of course be very various. Only the most common and evident will be mentioned, and such as are suggested by those casts of hydrocephalic idiot heads in which the distortion reminds one of the Natchez Indian heads. The dimensions are very great, as will be seen from the following table:—

TABLE III.—*Hydrocephalic Heads.*

	1st measure.	2d measure.	3d measure.	Where found.	No.
Pimault.	21 inches.	15½ inches.	16 inches.	Med. College, No. 86	28
Do.	19 " "	12 " "	15 " "	" " " 87	29
	24¾ " "	14 " "	15½ " "	" " " 106 a.	30
	25½ " "	17 " "	18 " "	" " " 107	31
Thick skull	25 " "	15½ " "	16½ " "	" " " 345	32

By comparing these with an average skull (No. 19), we see the other extreme of size in idiot heads. We shall not here detail the symptoms of chronic hydrocephalus, nor its morbid appearances, but only allude to one condition of the brain connected with the thickness of the cranial bones usually met with after the absorption of the cerebral fluid. The thick skull (No. 32) was that of a woman, who, at the age of fifty, enjoyed the use of all her faculties; from this time, her skull gradually thickened from disease, and her faculties became impaired in the same degree, till she died, at the age of sixty. The average thickness is about one inch; it is thickest at the sides and posteriorly, where it is an inch and a quarter thick; its thinnest part is one-half an inch thick. In the plates recently published of the diseased bones of the Dupuy-

tren Museum in Paris, another specimen, equally remarkable, is accurately represented.

In some cases, thickening of the skull is undoubtedly the result of increased action in the vessels of the head. Dr. Combe noticed it in cases where there had been unusual activity of certain faculties, with increased cerebral circulation; and this is still more common in actual insanity. He mentions (on *Mental Derangement*, p. 259) a case where the brain had diminished in size in proportion to the increased thickness of the skull, and where the frontal convolutions, corresponding to the thickest part of the frontal bone, were proportionally smaller than in the rest of the brain. He gives several cases, in all of which the cerebral vessels were gorged with blood. Thickness of the skull may also occur in other diseases of increased action, as, for instance, in erysipelas of the head (*op. cit.* p. 262), in which there was unusual thickness in the occipital region. In some cases of thickening, the diploë is perfect, the increase being in the two tables; but in others everything is confounded in one thickened mass, which appears to have been the case in our specimen; the bone is said sometimes to be of an ivory hardness. As we know exostosis is the result of a limited periostitis, there is no improbability in supposing that this general hyperostosis is the result of a general inflammation of this membrane. It would be difficult to account for it satisfactorily, when it occurs on the inner table, on any other hypothesis.

Chronic hydrocephalus affects the bones of the head in two ways: Either the bones are thinned and softened from imperfect ossification, or they are thickened. According to Andral, this thickness is not accompanied by any great increase in weight, the compact bone being replaced by a spongy texture. The cause of thickening is supposed by Andral to be this: the quantity of liquid having reached its maximum, if life be prolonged, it begins to be absorbed; as the liquid disappears, in order that there may be no interval between the brain and bone (ossification preventing the depression of the bone towards the brain) new osseous deposits must be made on the internal surface of the cranium, according as the brain assumes its natural dimensions; so that externally the head preserves the hydrocephalic size, while the cranial cavity has only its normal capacity. When the effusion separates the bones, leaving a membranous space between them—if the subject lives to be adult—these membranous spaces are filled by ossa Wormiana, as has been shown by Rudolphi and Breschet; these are chiefly found at the superior angle of the occipital bone and along the lambdoidal suture, where separation would very likely be greatest, and here also is generally found the greatest thickening. It is not meant to be understood that only the above cause is concerned in the production of these supernumerary bones; but this is only one of many, though a more frequent one than is usually admitted.

From whatever cause the thickening proceeds, the manifestations of the mind are more or less disordered. Out of 216 cases of insane persons, Gredin found 167 who had thickening of the skull—seven-ninths of the whole.

These hydrocephalic heads show various shapes. Pimault had a flattening from front to back, like the Natchez head; of her it is said that she had shown a great deal of pride.—No. 30 was a well-formed head, though enlarged in all its diameters.—No. 31, the largest of all, was a child two or three years old, with great prominence of frontal region and vertex. An examination of the brain shows an anterior arrest of development; and a great flatness, after the evacuation of the water.

It will be observed that in secondary idiocy there is no arrest of development, but a disorganization and disease in a brain previously healthy. Next to hydrocephalus as a cause of idiocy may be ranked the cerebral lesions of "cretinism," in its restricted sense. Dr. Pellissier, of Geneva (in Dr. Guggenbuhl's First Report of the Abendberg Institution, p. 49), considers a false hypertrophy of the brain as the most probable cause of cretinism. This organ may undergo a kind of vesicular extension, without an actual serous effusion, which diminishes and flattens the convolutions; in other words, hypertrophy with dilatation. In this stage of the affection, the cranium is atrophied by this dilatation, the sutures are separated, and the fontanelles are widened. When the dilatation ceases, the brain again subsides, and the bone in proportion becomes hypertrophied; he thus accounts for the thickening of the skull, which he says almost always exists in cretins of an advanced age. In this period of false cerebral development, the intellectual faculties are greater than in healthy children of the same age; this makes the subsequent decline the more marked and painful.

The cretin head, as will be seen by comparing the following table with the preceding, is larger than the average head of the same age; as would be supposed from the hypertrophy which the brain undergoes. The measurements of the first five skulls are taken from Dr. Guggenbuhl's Report above quoted; the last is No. 405 in the Medical College Collection.

TABLE IV.—*Cretins.*

	Age.	1st measure.	2d measure.	3d measure.	No.
Marie S. - - -	2 years.	16 inches.	13 $\frac{3}{4}$ inches.	10 $\frac{1}{2}$ inches.	33
Claudine S. - - -	2 "	18 "	14 $\frac{1}{4}$ "	12 $\frac{1}{4}$ "	34
John F. - - -	3 "	20 $\frac{1}{4}$ "	16 "	9 $\frac{1}{2}$ "	35
Eliz. Z. - - -	3 "	19 $\frac{1}{8}$ "	13 $\frac{3}{4}$ "	12 $\frac{3}{4}$ "	36
Martin D. - - -	5 "	20 $\frac{3}{4}$ "	14 $\frac{2}{3}$ "	10 "	37
Cretin of the Vallais -	aged	20 $\frac{1}{2}$ "	13 "	11 $\frac{1}{2}$ "	38

In the last skull, the size is about the average; the antero-posterior diameter is somewhat longer, while the third measurement is correspondingly less; the bones are heavy, and, as far as can be judged without section, thicker than usual, analogous to the thickening of rachitic bones. On the sides of the occipital bone there is considerable prominence, with a depression on the median line; perhaps to be explained by the cerebral hypertrophy (of Dr. Pellissier) expanding the bones at the points of least resistance on the sides, the middle

being supported and strengthened by the internal ridge for the sinuses and falx.

There is no need to more than mention the other forms of secondary idiocy, from various cerebral diseases, recognizable after death; and those more insidious forms from mere nervous exhaustion depending on severe study, venereal and other excesses, which may or may not elude our post-mortem search. These have been recognized as forms of dementia. One of the most common is believed to be from the premature tasking of the infant mind by our forcing-system of education, which, if it do not end fatally by cerebral disease, is liable to be followed by diminution of the intellectual powers, and even by hopeless idiocy.

The treatment of the various forms of idiocy and cretinism may be summed up in a few words. In an adult, who has been an idiot from birth, there is but slight hope of any great amelioration, as far as the brain is concerned, though the general health may be improved. All authors agree that *physical* treatment is most to be depended on, viz., pure air, gymnastic exercises, proper diet, and cleanliness. Medicines, except to correct ordinary symptoms, have not been attended with success. As a general stimulant to the nervous system, electricity and electro-magnetism would seem peculiarly applicable. Moral means are also of great value, as gentleness, kindness, and affectionate treatment.

As the animal instincts are here developed at the expense of the intellectual and moral sentiments, it becomes an object, if possible, to restore the equilibrium between these; if the higher feelings can be called into play, their animal nature will be proportionally lessened, as it were, by a kind of cerebral revulsion. The success of teachers has been found to be proportioned to their tact in interesting and fixing attention, that the rudiments of knowledge may be communicated; if *one* step be made in the right direction, it is comparatively easy to keep them in the path. Says Dr. Howe (page 54 of his Report), in the idiot, and in every one, "that which is, by nature, a little the strongest, becomes, *by exercise of its functions*, and by *neglect of exercise* of the functions of other parts, *very much the strongest*, until it utterly prostrates and masters them."

Dr. Combe (*op. cit.* p. 224) remarks that the excitement of fever may restore the idiotic to reason. When the idiocy arises from cerebral inaction or weakness, the febrile paroxysm raises the activity of the brain to the height requisite for a vigorous exercise of its functions; when the paroxysm is over, the mental phenomena return to their former level. How far an artificially produced febrile paroxysm, as by the agency of cold water, may be of advantage, would seem worthy of trial; the much abused "*vis medicatrix nature*" might thus be stimulated in a natural and efficient manner. That disease, artificial or natural, may be of advantage in the various forms of *dementia*, may be conceived from the following analogous facts mentioned by Dr. C. H. Stedman in the last Report of the Boston Lunatic Hospital (p. 18).

"One patient, an Indian, in good bodily health, afflicted with chronic mania, and who had been insane for three years, was seized with the severest form of dysentery which has ever come under my observation. While in the height of the malady, his mental operations began to undergo a change. After which, his mental and bodily convalescence went on together, and resulted in the perfect restoration of the entire man. Another, a man who had been insane over twenty years, and quite a difficult one to manage, owing to his strong mischievous propensities, was attacked with the same affection, and remained dangerously ill for some weeks. He recovered from dysentery, and now no patient in the house is more quiet and controllable. Indeed, to many he would appear mentally sound."

If we examine the chemical constitution of the brain, we shall find a difference between the idiot and the normal condition, which it may be well to mention. From the researches of M. Couerbe, it appears that the proportion of phosphorus is much less in the idiot than in the normal brain. According to Carpenter, the contents of the nerve-cells and tubes are chiefly phosphorized fats; and he regards them as the active agents in the operations of the nervous system. The amount of phosphorus is greatest at the period of greatest mental vigor; in idiocy, the proportion is one-half less. This may indicate the internal exhibition of phosphorus in idiocy; it has long been known as an excellent general stimulant of the nervous system.

In Dr. Guggenbuhl's Report, there are detailed several cases of great improvement in cretins from the treatment followed at the Institution on the Abendberg; this treatment is purely physical. In No. 33, after a residence of two and a half years, there was an increase in the first measurement of $2\frac{5}{8}$ inches; with a corresponding improvement in the intellectual faculties. For further details of a most satisfactory nature, this Report may be consulted with advantage.

Any interested in the improvement of idiots will be greatly astonished as well as gratified by a visit to the school at S. Boston, under the care of Mr. Richards. What volumes could not convince us of before the actual experiment, they will there acknowledge, viz., that kind treatment, perseverance, proper food, exercise, sports, and a judicious mental discipline, will do much to improve the condition of the hitherto abandoned class of idiots.

It has been seen that idiocy and partial talent may exist together, where, with a generally defective brain, certain portions are well developed; and in such cases, where the size and form of the head are changed, accurate measurements may be of great importance in a legal point of view. The law of Dr. Gall, then, may be repeated, in conclusion, viz., that when the first and second measurements of the head (as above defined) are below 17 and 11 inches, there is always greater or less stupidity; that when the first is from 11 to 13 inches, and the second 8 or 9, the condition can be but little above idiocy.

ART. IX.—*Case of Hæmoptysis Neonatorum.* By CHARLES G. ADAMS, JR.,
M. D., of Keene, N. H.

AMONG my pathological records for October, 1850, I find the following case, which may be considered not altogether unworthy of notice.

Mrs. ———, ætat. thirty, in stature small, but of tolerable constitutional vigor, was confined prematurely with her second child at the completion of a gestation of seven months and a half. Labour natural, child (female) of normal size, funis around the neck, respiration established artificially.

The respirations continued feeble the first twelve hours, with no pulse at the wrist. The child, however, nursed and cried well, had natural evacuations from bowels and bladder, and soon put on a more favourable aspect, extremities becoming warmer, pulse being perceptible at wrist, and respiration rather more free. But about an hour before death, it had a sudden discharge of bright, arterial blood from the mouth and nose, with symptoms of suffocation, which led the nurse to think it was dying. It rallied, however, and respiration again became comparatively easy.

After an interval of thirty or forty minutes, it suffered another similar attack of the hemorrhage, under which it rapidly sunk, just twenty-four hours after birth.

The quantity of blood lost might have been five or six drachms. The mother had a good "getting up." Her first labour, which was premature, occurred ten months previously, at the commencement of the ninth month, the child dead-born, and in an advanced stage of putrescence.

The father is rather slender, inclined to pulmonary difficulty, having suffered from one or two attacks of hæmoptysis.

The day following I made an examination, thirty hours *post-mortem*, and these are the appearances that were presented.

Exterior habit.—The skin has universally a uniform yellow tint. Upon neck and upper extremities numerous petechiæ, or circular, livid spots of extravasated blood, varying in size from a diameter of half to three or four lines. These were observed before death. *Abdomen* much distended, but flat on percussion. No rigor mortis.

Encephalon not inspected.

Thorax.—Thymus gland as usual very large, appearing perfectly healthy. The lungs of a very dark livid colour, and solid, except a small portion on their lower anterior edge, perhaps one or two cubic inches, which was of a more healthy hue, crepitated under pressure, and alone had a specific gravity lighter than water. Upon incision the solid portion presented a surface almost black, glistening like the cut surface of a coagulum, though less smooth and uniform, which led me to pronounce the lesion without hesitation extensive pulmonary apoplexy. The bronchia, where they could be traced, were filled with a

bloody, frothy mucus. No tubercles could be anywhere discerned. In the pleural cavities, a small quantity of straw-coloured serum.

The *Heart* contained dark, fluid blood; parietes tolerably firm. Foramen ovale closed by its diaphanous valvular membrane. Ductus arteriosus remained pervious.

Abdomen.—Upon laying back its parietes, the liver and spleen concealed from view every other viscus, filling almost the entire abdominal cavity. Peritoneum natural.

Stomach.—Exterior or peritoneal aspect presented numerous lengthened, livid spots of extravasated blood, from one to three or four lines in width, partially encircling the viscus, and more abundant and larger towards the cardiac extremity. Considerably distended with gas.

Intestines.—Contracted generally; also presenting externally the dark spots of extravasated blood, circular or oval in form, many three-quarters of an inch in diameter, interspersed at somewhat distant intervals throughout the entire tract of the alimentary tube; more numerous, however, in the small intestines, which had a universal pink hue, and in some portions of considerable extent, a very dark colour.

Gastro-enteric mucous membrane.—The stomach contained three or four ounces of dark-coloured, sanguineous fluid, with one or two black coagula floating in it. Its mucous coat sufficiently firm, of a bright rose colour, from the evident engorgement of minute capillaries, and in some places quite dark. In its thickness and beneath it existed the ecchymosed spots above noticed. No coagula were found adherent. The small intestines contained a considerable quantity of thick, bloody mucus, having a slimy aspect and feel. No natural appearance about the contents of the intestines anywhere. Their mucous membrane was considerably softened in places, having a general aspect like that of the gastric: the whole simulating most exactly a case of gastro-enteritis of high grade, in the adult. No ulceration, however, was discovered.

The *Mesenteric glands* were numerous, enlarged, and of a rose colour.

Liver of the normal proportional dimensions: colour and consistence natural, though somewhat congested. Gall bladder of a very light colour, and comparatively empty. Supra-renal capsules and kidneys normal, the latter being distinctly lobulated.

Spleen in colour and consistence natural, but in size somewhat exceeding the average weight of that organ in the *adult*.

No other remarkable appearances.

The foregoing case presents for consideration the following interesting phases: 1. The jaundice. 2. Its connection with purpura (porphyra) hemorrhagica or hemorrhæa petechialis. And 3. The occurrence of the latter at this early period of life. With a brief notice of each, I shall submit the case.

First, then, of the jaundice.

The saffron hue so common to new-born infants has won for itself a place

in the nosology of authors—the icterus neonatorum. At the same time, very many are disposed to dispute its claim to the designation of *jaundice*, ascribing it either to the hyperæmial condition of the whole surface at birth, a state analogous to a bruise, which terminates by a change of hue from that to the natural flesh colour, or to that never-failing resource, “a cachectic condition of the blood”—both entirely unconnected with any hepatic derangement; and asserting that *true jaundice* at this period of life, though it is not exempt from it, is of rare occurrence.* While, on the other hand, we see another class of observers† assigning its pathology—more properly, as it seems to us—originally to some hepatic or biliary trouble, in consequence of which the bilious fluids return to be mixed again with the blood, thus occasioning the yellow colour; speculating much upon the route they take, yet after all leaving future observation to decide the *point d'appui* of functional deviation.

This would seem to be the opinion of Richter, supported by others‡ of his own time, who imputes the jaundice to “a stimulus or irritation acting upon the hepatic system, which prevents the afflux, secretion, and excretion of the bilious fluids; or rather so deranges the circulation in the hepatic system, that the several parts do not reach their destined places according to the laws of health, but are again mixed with the general mass of fluids.” Another argument also in its favour is the sudden change which takes place in the circulation of the liver at birth.

The source of “stimulus or irritation” in these cases would seem to be the sudden change of material in nutrition, the mother’s milk, which must act powerfully, though in a varying degree, upon the nice sensibilities of infantile life.

The existence of *true jaundice, imprimis*, we have deemed it important to determine, in the consideration of its connection with hemorrhage in new-born infants.

Now, we know, from observation, that adults affected with jaundice are exceedingly prone to the most inveterate hemorrhages from the slightest wound; that the analysis of blood in cholæmia§ gives in some cases the presence of bilic or bilifellinic acid, and in all a great decrease in the red corpuscles and fibrin, a decrease in the normal proportions of either predisposing to hemorrhage;|| also that, by the presence of the abnormal ingredients, the blood is rendered highly alkaline, which has been said to diminish its tendency to coagulate by altering the character of the fibrin, and thus to favour exhalation.

Such are the phenomena which attend jaundice in the adult, and one of the most distinguished pathologists of the present day has remarked that, of the numerous cases which have fallen under his observation, of hemorrhage in new-born children, either from the umbilicus or into the internal organs, very

* Sauvages, Mason Good, Dewees, Underwood, Watson.

† Cutler, Stokes, Mackintosh, Gregory, Wood, Evanson, and Maunsell.

‡ Selle, Vogel, Chaux, Vogler, and Bang.

§ Simon.

|| Magendie and Andral.

many have been associated with jaundice. In this case, then, a limited personal experience becomes valuable, endorsed by such high authority.

Purpura hemorrhagica, a case of which affection the foregoing must be considered from its strong analogy in phenomena and morbid appearances, is not uncommon in children and youth, happening, indeed, most often in the young, but rarely at this early period of existence.

Out of seventeen cases which occurred to Willan, three were infants under a year old. And never, with a single exception,* have I seen an allusion to this disease as intra-uterine or congenital.

In this affection, we find all the morbid appearances detailed above, not omitting jaundice, which, though not invariably present, is quite common, viz., with external and internal ecchymoses, effusion of blood into the stomach and intestines (associated even with enteritis), pulmonary apoplexy, disease of the liver and hypertrophy of the spleen,† sometimes even much more extensive lesions. Rayer observes, however, that pulmonary and intestinal hemorrhages are most frequent in adults—with whom all writers affirm that it is not uncommonly an immediate cause of death.

The master-mind of antiquity was very intent “to clear the blood of its acrimony, its vicious humours, rough acidity, fetid alkali, and rancid oil‡ “by his το ενορμῶν of organic fibre! So also, in this affection, Brown was impatient to add an extra stimulus to the blood to counteract “the atony and laxity of the vessels which permitted the finer parts of the fluids, sometimes serum, sometimes red blood, to flow through their patulous orifices.”§

And since their day, while one clings to the theory of spasm of the capillaries, and another to that of paralysis of the venous system,|| most are compelled, both humorists and solidists, to unite in this, that the phenomena in this disease are to be ascribed to “a disturbance of the healthy relations of the blood with the organic sensibility of the capillary vessels.”¶

Now, too, we are able to see more clearly wherein and to what extent the blood is faulty. Passing over the more minute quantitative analysis of blood in purpura hemorrhagica, we find a decided augmentation in its watery portions, and decrease of the blood-corpuscles, besides the presence of bile, which Simon deems of great importance from its power of dissolving the blood-corpuscles.**

Richter†† relates a case of *petechiæ sine febre*, wherein the petechiæ “were purely of a bilious nature.”

That jaundice is a common accompaniment of purpura hemorrhagica, I am inclined to believe, partly from personal observation, but mostly from the concurring opinions of numerous other observers. This existence of bile in the

* Dr. Ritchie, Braithwaite, part xvi. p. 51.

† Drs. Ritchie and Goldie.

§ Elementa Medicinæ.

¶ Eberle, Practice of Medicine.

†† Medical and Surgical Observations.

‡ Aphorisms of Hippocrates.

|| Zoonomia.

** Chemistry of Man.

blood, with or without its colouring principle, coupled with the common occurrence of jaundice in this affection, either as cause or effect, would seem to suggest a most interesting subject of inquiry for future observation.

Of the hæmoptysis in this case, it seems to me probable, from the clear, bright red, arterial nature of the blood, the symptoms of suffocation which followed, and the appearance of the lungs upon necropsy, that the pulmonary mucous membrane was the true source.

Was the disease itself hereditary, or was that innate deficiency of vital energy its exciting cause? Certainly not the former; and though the latter might, in a considerable degree, have predisposed to it, still I suppose this hemorrhagic diathesis depended ultimately for its cause upon *hepatic derangement*, which operated directly in producing the spanæmia, and indirectly influenced the condition of the solids.*

Should this view seem to relapse nearly two thousand years into the *mechanical* considerations of the *methodic sect*, nevertheless it will be considered nearer the true pathology than anything exclusively of the fluids or of the solids, of "spasmodic action of the capillaries," or "paralysis of the venous system."

Had life been prolonged in this case, it is not improbable that a fatal hemorrhage would have occurred at the umbilicus, after sloughing of the cord.

KEENE, NEW HAMPSHIRE, *January, 1851.*

ART. X.—*On a new form of Phosphate of Lime in Crystals; as it occurs in Putrefying Urine.* By JNO. C. DALTON, JR., M. D. (Read before the Boston Society for Medical Observation, Feb. 17, 1851.) [With seven wood-cuts.]

IF healthy urine be allowed to remain for some days in a cylindrical glass vessel, lightly covered, to prevent the access of dust, &c., its gradual decomposition gives rise to various crystalline formations. After the first twenty-four hours, there is usually to be seen, at the bottom of the vessel, a very light cottony cloud, composed apparently of mucus from the urinary passages, but not presenting any very definite forms under the microscope, with the exception of octohedral crystals of oxalate of lime, which it frequently contains, in considerable abundance.

At the same time, or a little later, a very thin pellicle is often visible on the surface of the urine, composed of minute crystals of oxalate of lime, less perfectly formed, for the most part, than those at the bottom, but mingled

* I regret not having made a chemical and microscopical analysis of the fluids in this case.

usually with a few of the ordinary size and shape. This pellicle is often so delicate that it is only to be seen by allowing the light to fall obliquely upon it, when a tremulous glittering surface becomes visible, which frequently exhibits a play of faint prismatic colours. It is sometimes arranged in wavy lines and streaks, so as to give a marbled appearance to the surface of the fluid.

After a few days, this pellicle sometimes begins to be sprinkled with minute, whitish, opaque spots. These spots are caused by collections of small radiating crystals, which at first are easily broken up and separated from each other in removing them from the surface of the urine; so that, at the time when their formation has first commenced, they are usually obtained only as detached bodies, or in the form of incomplete groups. At this time, the crystals are quite colourless and transparent, and have the shape of a slender scalene triangle, with the long sides slightly curved. They already show a disposition to form themselves into circular groups, by applying their apices to each other, thus assuming the shape of a radiated bundle or rosette. They are often, also, laid one upon another, with their flat surfaces opposed, like piles of boards. In the course of a few days longer, the crystals increase in size and thickness, still retaining their colourless aspect, and become grouped together in complete rosettes, and even in globular masses; so that, by raising and lowering the stage of the microscope, we may bring into view either the upright crystals, presenting their *butt ends* towards the observer, or those which are arranged horizontally in a circular form.

Fig. 1. (6th day.)



Fig. 2.

(15th day.)

Fig. 3.



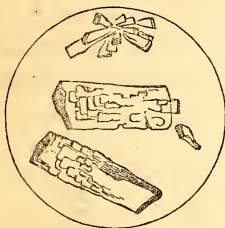
Radiated bundles, together with octohedra of Oxalate of Lime and prisms of Triple Phosphate.

The period at which these crystals first make their appearance varies somewhat with the temperature of the room, and various other circumstances which hasten or retard the putrefactive changes in the urine. Usually, however, their formation commences between the third and sixth day, when the urine is just beginning to lose its acidity, but has not yet become decidedly alkaline.

In the majority of cases, the urine has been neutral in reaction at the time of their appearance, but they are not unfrequently to be seen when it is still distinctly acid.

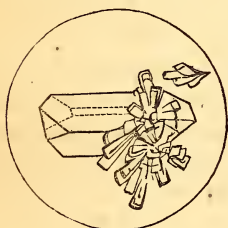
When the alkaline reaction is fairly established, their formation ceases, and in place of them, there is an abundant production of the ordinary prismatic crystals of the triple phosphate; so that, after the first six days, the two forms are usually to be seen together, the latter predominating more and more in proportion to the length of time which has elapsed, and the rapidity with which putrefaction advances.

Fig. 4. (12th day.)



The precise chemical composition of these radiated crystalline bundles is not very easily ascertained, owing to the difficulty of obtaining them in any considerable quantity for manipulation.

Fig. 5. (9th day.)



Radiated bundles, mixed with large prisms of Triple Phosphate.

The radiated form is not the only one in which the crystals present themselves, but they are sometimes arranged also in a parallel position, so as to form a thick, solid mass, which even bears some resemblance occasionally to a prismatic figure, the ends and edges of the crystals which compose it remaining visible on its sides.

Indeed, all chemical operations on them must be conducted with the aid of the microscope; and they are usually associated, also, with several other crystalline forms, such as oxalate of lime and prisms of triple phosphate, from which it is not easy to separate them completely. They are also often surrounded, and partially obscured, by clusters of dark molecules, probably of animal matter; which, on the addition of potass, become dissolved into a translucent, gelatinous mass, leaving the crystals quite clear and sharply defined.

The crystals themselves are undoubtedly composed of some phosphatic salt.

They resemble the triple phosphate very closely in their colourless and transparent aspect, and in their degree of refraction. They are not affected by potass, but dissolve slowly in acetic acid.

Fig. 6.



Appearance of the Radiated Bundles, while undergoing solution in Acetic Acid.

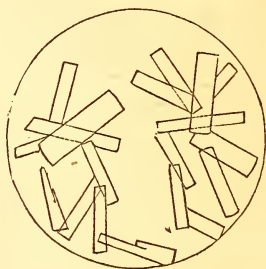
When they are recently formed, this solution takes place with comparative readiness, but as they increase in size they seem to become denser, and to resist, for a longer time, the action of the solvent. At this period, they are associated, as already stated, with the prisms of the triple phosphate; and the difference in solubility between the two is then very evident, the latter disappearing rapidly,

after the application of the acid, while the former remains, for a considerable time, untouched; so that it is possible, by this means, entirely to dissolve out the prismatic crystals, and yet wash away the acid in time to leave the radiated bundles nearly, or quite perfect.

In this regard, they resemble completely some crystals of phosphate of lime artificially prepared by Dr. Jno. Bacon, of this city, by adding chloride of calcium to urine, and allowing the mixture to stand for some days. These artificial crystals, as I am informed by Dr. B., dissolve with some difficulty in acetic acid, and can be separated from the prisms of triple phosphate, with which they are associated, by the same process as that described above, viz., by dissolving the latter, and then immediately washing away the acid with pure water. They are also flat and ribbon-like in figure, and resemble the other crystals in their general aspect and their refractive power; only they are not pointed at one extremity, and show no disposition to assume the form of radiated clusters. (Fig. 7.) It is only some days later that radiated figures are produced, composed of acicular crystals of the same salt.

Dr. Bird also states (on "Urinary Deposits," Amer. edition, p. 130) that the phosphate of lime is not quite so soluble in dilute acids as the triple phosphate, and that, "when a mixed deposit of the calcareous and magnesian phosphates exists, the phosphate of lime is left undissolved, when digested in very dilute acetic acid."

Fig. 7.



Artificial Crystals of Phosphate of Lime (from one of Dr. Bacon's specimens).

ART. XI.—*A case of Double Ovarian Dropsy—both Ovaries successfully removed by the large Peritoneal Section.* By E. R. PEASLEE, A. M., M. D., Prof. of Surgery in the Medical School of Maine.

MISS SARAH N. G——, of West Claremont, N. H., æt. 25, black hair and eyes, delicate development, but not fragile—a young lady of intellect and refinement—first consulted me on the 6th Sept. 1850. She had first discovered a tumour extending half way from the symphysis pubis to the umbilicus, and precisely on the middle line, in June, 1849, or about fifteen months ago. It was then, perhaps, three inches in diameter, very movable, and apparently of a spherical figure. Its size became doubled, she thinks, within six months afterwards, and has been still more rapidly increasing since.

It has never been painful at all, nor tender on pressure, up to the present time. A disagreeable sensation of *tension* alone has been felt, and this only for the last few months. She has never, at any former period, had any pain in either iliac or inguinal region; nor any other symptom of inflammation, or even irritation, of either ovary. Menstruation has been regular to the present time; and there has never been any leucorrhœal discharge. Nor has there been any derangement of the stomach or bowels till since she commenced the use of drastic cathartics; and her present emaciation, weakness, pallor, and loss of appetite, she attributes mainly to them. During the last few months, she has, in addition to hydragogue cathartics, made trial of diuretics, and iodine ointment—but with no perceptible benefit. Her appetite is still poor, though all medication has been suspended for two or three weeks. She is not yet troubled with either dyspnœa or nausea from the pressure of the tumour.

As several distinguished physicians had been either doubtful or incorrect in their diagnosis of Miss G.'s case, I shall be the more explicit in regard to the examination made to establish it—the general condition of the patient having been already indicated.

The *abdomen* is very prominent; its circumference being thirty-nine inches above the hips, and forty one inches around and across them. The enlargement is regular, except that the left side, from the spine to the linea alba, measures three-quarters of an inch more than the right. It rises to within two inches of the ensiform cartilage, and fluctuation is detectable in every part of it. The abdominal walls are very tense, and not yet at all pendulous. The skin even is so tense as not to allow of any motion. No tympanitic sound is elicited by percussion, except over the epigastrium; and whether the patient is sitting, standing, or lying in varied positions, no apparent effect is produced on the fluctuation, the sound on percussion, nor the position of the enlargement itself.

A tumour is felt, *per vaginam*, in the region of the left ovary, around which (and also obscurely *within* it), fluctuation is apparent on percussing the abdomen externally; though, as a whole, it appears lobulated and quite resistant. The finger can reach only a portion of it, perhaps as large as a hen's egg.

This tumour is also felt *per rectum*, and most extensively to the left of the uterus; the latter being slightly retroverted, but not inclined to either side. This aspect of the tumour seemed entirely solid, and not manifesting the least fluctuation. It can be slightly elevated on the tip of the finger; but whether from the yielding of the attachments, or of its walls, I cannot determine.

Diagnosis.—An ovarian tumour, probably originating from the left side; the fluid being contained in a large sac constituting the greater part of the tumour; and the more solid portion, felt *per vaginam*, being a mass of smaller sacs connected with the latter, and containing each so small a quantity of fluid as to admit of only an obscure fluctuation.

Advised that the patient be tapped without delay, with a view to ascertain whether the fluid was principally contained in a single large sac, as appeared to be the case—how large the solid part of the tumour might be; whether the diseased mass had become adherent to the surrounding parts and organs; and all other facts bearing on the question of removal of the mass by the large peritoneal section—this operation having been previously suggested and explained to the patient before she consulted me.

Sept. 11th (five days afterwards), Dr. E. E. Phelps, of Windsor, Vt., tapped the patient, and obtained 26 lbs. of a thick fluid of a brown colour (specific gravity 1026), with flakes floating in it so large as to obstruct a canula of the common size. An apparently solid tumour at once became prominent on the left side of the abdomen, seven and a half inches in its vertical dimensions, and four inches in its transverse at its upper part by five inches at the lower. It seemed perfectly movable, and non-adherent to any contiguous part.

The patient was at once relieved. She came down stairs the morning after. Her appetite at once returned; the kidneys began immediately to act copiously, and so continued for a week. Still, Dr. Phelps found, on the 15th, that the sac was rapidly filling again.

I again saw the patient on the 17th (six days after the tapping), with Dr. S. G. Jarvis, her attending physician, and Dr. Phelps. She had sat up all day as well as yesterday, and appeared much better in countenance than when I saw her on the 6th; but a large quantity of fluid had accumulated since the 11th.

Examination.—Abdomen quite lax, and fluctuation everywhere apparent, except in the left lumbar region, and thence forwards to a line from the seventh left costal cartilage to the anterior superior spinous process of the ilium. No tympanitic sound on percussion, except over the upper part of the ascending and right half of the transverse colon; though, while the patient sits erect, it extends across the epigastrium. Circumference to-day above the hips, while erect, is thirty-three inches; around the hips, thirty-five inches. Distance across from one anterior superior spinous process to the other, thirteen and a half inches.

The solid tumour, so prominent immediately after the tapping, is far less so now. It is found to extend from the level of the left crista ili to the cartilage of the seventh rib; is not movable to any considerable extent; is not tender nor even sensitive to pressure, and presents a distinct elevation on its anterior face half as large as a hen's egg, and about four inches from the top; probably a distinct sac full of fluid. Its position is nearly vertical, and it can be traced downwards about seven inches. Its other dimensions appear the same as those given by Dr. Phelps on the 11th; but the accumulation of fluid since then renders it more difficult to determine its size with accuracy.

The skin of the abdomen is now movable in every part, and there is no tenderness on pressure anywhere, except at two points, each about one and a

half inches square, viz., just below the cartilage of the eighth rib on the right side, and at the anterior extremity of the tenth rib on the left side. This did not appear to be peritoneal tenderness. She has had no pain since the tapping; no unpleasant sensation indeed, except a tired feeling of the abdominal muscles, which, during the past year, she has oftentimes experienced. I, therefore, discovered no proofs of adhesion of either the solid portion or the sac, now perhaps half filled with fluid again. It was, however, *possible* that the latter may be extensively adherent, either to the omentum majus, or the peritoneum of the abdominal walls, or both. The mobility of the solid portion, after tapping, satisfied Dr. Phelps, at the time, that this part of the diseased mass could not be adherent. And no sign of peritoneal inflammation has hitherto existed to lead to the suspicion of adhesion from that cause, either prior, or subsequent, to the tapping. And previous examinations even, whether external or internal, have never produced pain at the time or afterwards.

Per vaginam, the finger feels to-day merely a tenseness in the region of the left ovary, but nothing of the solid tumour detected on the first examination, eleven days ago. Nor can any fluctuation be detected in this direction from the vagina to-day.

Per rectum, also, I can detect only the unyielding band in the position of the left ovary; no fluctuation or tumour. The uterus is a little retroverted, but lies on the middle line. It is not at all tender. It can be displaced a little to the left, but not towards the right side.

The uterine sound entered the uterus two and a quarter inches, following the middle line also; but the uterus could not be moved perceptibly upon it. It produced no pain.

On passing a sound into the bladder, it also followed the normal direction, and could be passed freely in all directions within that organ.

All the changes which could be made in the position of the enlargement produced no appreciable effect upon the position either of the uterus or the bladder, while they were respectively sounded.

All the preceding facts were thought to be consistent with the diagnosis given on the 6th; the evacuation of the fluid by paracentesis having allowed the solid portion to rise higher in and above the pelvis, into the lower part of which it had before been pressed, by the greater weight in the large sac attached to it—this elevation of the tumour also producing the tense state of the left broad ligament just alluded to.

I therefore told Miss G. that, so far as positive signs were concerned, her case appeared at least as favourable for the operation of extirpation by the large section, as several of the cases reported in which it had been performed; that I did not assume that it was ever justifiable, but, if so, it would be so in the present case, so far as I could discover any indications to the contrary; that I did not, however, *advise* the operation, since it might prove fatal, even though the disease was successfully removed; and on the other hand this might, on

opening the abdomen, be found impossible, in which case she could, of course, derive no advantage from the operation, and might even lose her life in consequence of it.

She replied she had resolved to have the operation performed, if there was any possibility of its succeeding; certainly, if there was one chance in eight for her to live through and recover from it, independently of the chance of removing the disease; that she well knew all the risk, and wished to incur it. She had before said she had no desire to live as at present, and had calmly contemplated all the consequences of her decision.

At her solicitation, with the request of Drs. Phelps and Jarvis, I therefore engaged to perform the operation on the Saturday following. She seemed much relieved by my decision, and replied, "I shall long to have the day arrive."

Thursday evening, Sept. 19th.—To take a free dose of castor oil, and only fluid food afterwards. To keep quiet also, especially on Saturday—the operation to be performed at 3½ P. M. of that day.

Saturday, 21st.—The fluid has so far accumulated, during the past four days, that it is now difficult to find the solid part of the diseased mass at all. The tenderness at the two points specified on the 17th is now somewhat increased, and I discover a distinct "friction feeling" not before existing over them—mentioned at the time as a proof that adhesions of the mass had formed since my last examination.

Operation, 3½ P. M.—The patient was placed upon a table, with the feet towards a window, and resting on a chair, the head and shoulders being elevated upon pillows placed upon an inclined plane, and supported by an assistant. She had previously evacuated the bladder; the pubes had been shaven so far as would be implicated by the incision; a sheet applied around the pelvis, and a line drawn with a lead pencil, to indicate the precise position of the incision, from a point two inches above the umbilicus, and one-half inch to the left of the linea alba, down to the symphysis pubis. The temperature of the room had been raised to 80° (Fahr.), and was to be kept at this point for the first few days—the air being also kept damp during the operation by the constant evaporation of water.

Drs. Jarvis and Tolles, of Claremont; Drs. Phelps and Clark, of Windsor; Dr. Comings, of Plainfield, and Messrs. D. S. Conant and A. T. Fitch (two of my medical pupils) assisted me.

Anæsthesia was induced, in about six minutes, by a mixture of pure sulph. ether (twelve parts) and chloroform (one part), and the operation was commenced at ten minutes before four o'clock.

On dividing the skin and superficial fascia upon the line marked as above—it being nine inches in length—I found, contrary to my expectation, that the latter, together with the adipose deposit in it, was at least one and a quarter inch thick, for an extent of four inches below the umbilicus; which caused no little subsequent difficulty in closing the wound. Next, the abdominal apo-

neurosis was cautiously divided for half an inch, at a point three inches below the umbilicus, with the intention of falling directly upon the linea alba, and between the recti muscles. But the deviation of the linea alba to the left side being still greater than I had calculated, my incision was found to have penetrated the sheath of one of the recti. By the introduction of a probe, it was at once ascertained to be the *right* rectus which I had reached, and just at its inner edge; and thus the precise position of the linea alba was indicated.

After all external hemorrhage had ceased (not over 3j), I carefully divided the linea alba for about six inches. In doing this, a small artery in the edge of the left rectus was severed; but the contact of the air at once stopped the bleeding. I now expected to see the fascia transversalis and peritoneum; since, in this operation, they are generally found very much thickened. But in this I was disappointed. On dividing, with the greatest care, the very thin aponeurosis, I brought into view a dense white membrane, and of too smooth an aspect to be the external surface either of the fascia transversalis or the peritoneum; and which I concluded, after a brief examination, must be the sac itself. But, as some doubt was expressed as to the correctness of this opinion, I endeavoured by careful dissection to detach from it either the fascia or the peritoneum, until it became certain that the membrane in sight was the sac itself. In settling this question, however, at least ten minutes were lost. Moreover, a vein in the wall of the sac was divided, which afforded almost all of the blood lost during the operation, and which amounted in all to not more than 3x. The hemorrhage was arrested by applying a ligature to the vein, till the sac should be removed. In detaching the vein for this purpose, the sac was divided completely through, and a small quantity of the characteristic contents escaped.

And at this juncture, still another cause of delay occurred. The patient, hitherto perfectly quiescent, now began to make violent efforts to vomit; and supposing the anæsthetic might possibly produce this effect, it was at once withdrawn, and not afterwards administered during the operation. Still the retching continued; and during this time I could only sustain the abdomen with both hands, and keep the internal organs from protruding as effectually as I might. About fifteen minutes were lost in this way. During these violent efforts, the incision gaped so as to assume an elliptical form; the sac filling up the ellipse, except when a loop of intestine or a portion of omentum made its appearance. These were, however, always replaced with ease, during all stages of the operation.

When the retching had ceased, I introduced the hand to ascertain if the sac were anywhere adherent—intending, if it were so extensively attached as to render it improper to remove it, to adopt the method first suggested, I think, by Prof. Récamier, viz., to evacuate the contents through a small opening, and attempt to produce adhesion of its anterior surface to the abdo-

minal walls. But to my great satisfaction, I found the mass was nowhere adherent except at the points mentioned before I commenced the operation, over which the "friction feeling" was so distinct. Here the adhesions covered, on each side, a surface about two inches square.

The contents of the sac were next evacuated, through a large incision, into a bucket, and amounted to twenty-two pounds of fluid, like that obtained by Dr. Phelps ten days before. The incision through the abdominal aponeurosis was now enlarged to correspond with that in the skin; and the sac being now collapsed, the adhesions were easily broken up by the fingers; and before removing the hand, I left every part free down to the pedicle, which was very broad and firm, and attached to the left side of the uterus, as was expected.

The more solid part of the mass is now seen to be an aggregation of smaller sacs of various sizes, from that of a pea upwards. The two largest were punctured with a trocar, and at least a pound of fluid escaped. The whole mass was then lifted out of the abdominal cavity, and held by assistants, while I passed a double ligature of six threads of saddler's silk, "not twisted, but well waxed," as Dr. Atlee advises; and cutting out the needle, tied each portion around one-half of the pedicle. The latter was six inches wide and half an inch thick; except one inch in the middle, where the two layers of peritoneum in the broad ligament appeared in their natural relation. On the outer side of this thin portion were an artery (nearly as large as the radial) and a vein, and a quantity of areolar tissue; on the inside, the Fallopian tube, and a still larger artery and vein, with a quantity of areolar tissue supporting them. The pedicle was divided obliquely upwards, and to both the *right and left*, from a point a quarter of an inch above where the ligature passed through, to within a quarter of an inch of the diseased mass.

On making a careful examination of all the parts and organs brought into view, preparatory to closing the incision, I discovered that a sac of the size of a pullet's egg was developed in the *right* ovary also; and that the whole organ was otherwise diseased. Accordingly, a double ligature (of two threads only) was passed through the broad ligament, and the remaining ovary was likewise removed.

The bladder was completely collapsed; the uterus perfectly smooth and healthy. The intestines were also in every part collapsed, and, therefore, now gave not the least trouble from protrusion. The parts exposed to the action of the air assumed a somewhat dusky hue; especially the uterus and bladder, which were of necessity longest exposed. The omentum was now carefully replaced; the operation, inclusive of the delays above specified, having occupied fifty-five minutes.

Closing the Incision.—The edges were accurately brought together, and retained thus, by five long and stout needles, equidistant from each other, and consequently one inch and a half apart, and which punctured all the

layers but the peritoneum. The insertion of the needles was a difficult matter, for reasons hereafter to be specified. The four ligatures were brought out through the incision at the nearest point, this being between the lowest two needles. No tent of any kind was used. The skin would not meet for some inches in the middle portion of the incision, on account of the pressure of the parts underneath from the needles; and was drawn together by points of suture an inch apart, penetrating it alone. Ligatures were applied around the needles in the usual way.

The incision, being thus brought together, formed a prominent ridge of the same length, and four inches wide; there being on each side of it a deep depression, from the empty state of the alimentary canal, and the collapsed state of the hitherto distended abdominal walls. Strips of adhesive plaster were applied across this between the needles; and a compress dipped in warm water, over which a dry one and a piece of oiled silk were placed, completed the dressing; and the patient was placed in bed at twenty-five minutes before six.

She is now (fifteen minutes before six) much exhausted, having suffered much from the introduction of the needles, as well as from the operation. Is deadly pale, and still very sick at the stomach. Pulse 70, very weak; respiration 18. Warm blankets are applied, and a little brandy and water are given, and a few drops of *aq. ammoniæ*, at intervals. On inquiring whether she still hoped to rally, and do well, she replied, "I have not a doubt of it, sir."

She was now attended constantly, for the following nine days, by three of my medical pupils, in turn: viz., Messrs. Conant, Fitch, and T. W. Wadsworth, who, during that time, kept an hourly record of her condition. From this, I extract the account which follows below. The temperature of the room is to be kept at 78° to 80°; she is to take the *aqua ammoniæ*, &c., till reaction is established; and forty drops of McMunn's elixir of opium, to be then given. Nothing but bread-water for diet; acidulated drinks; not to speak aloud, nor to move without assistance; catheterism every six hours; and the wet compress to be renewed every three hours, or before it becomes dry.

8 o'clock P. M. (two hours after operation). Pulse 112, soft. (N. B. Her natural pulse is about 90.) Respiration 21; countenance pale and cold. A little chilly at intervals. Is very faint, a common thing in her best health, when excited. Nausea still continues; has not vomited.

10 o'clock. Has been gradually rallying the past two hours. At 9, took a little wine-whey. Pulse now 112, fuller; respiration 26. Has slept a few minutes.

11 o'clock. Reaction is now complete. Pulse 112, and full; respiration 24. Sickness and faintness nearly gone. Drew ʒiij of clear, concentrated urine. She has "not the least doubt" she will recover. The sickness and

faintness recurred to some extent during the night; and her uneasy sensations were relieved by changing her position about once an hour. She slept very quietly about three hours in all. Vomited once; \bar{z} iv healthy urine drawn at 5 A. M.

Sunday, 6 A. M. Patient wakes up refreshed, saying she has "rested better than on some nights before the operation." Pulse 120, full; respiration 24. (At 5 in the afternoon of to-day, the pulse fell to 105.) Dr. Jarvis took charge of the patient at 10 A. M., and I did not again see her until Tuesday P. M. She has no marked thirst nor heat of surface to-day. Less frequent changes of position are necessary. Occasional faintness, and slight pain in the course of the incision. Dr. Jarvis drew off \bar{z} iv urine at noon, and \bar{z} iv more at 7 in the evening.

Monday, 6 A. M. Was somewhat cool at 3 this morning, but no chill. Urine \bar{z} ij, at 2 A. M. Has had a comfortable night; but has slept only between two and three hours. Pulse now 112; respiration 22. During the day, the former ranged between 109 and 114. At 9 A. M. \bar{z} viii of urine; \bar{z} vi more at 5 P. M.; and \bar{z} viii also at midnight. Tongue is moist, with a very thin white coat. Had a severe deep-seated pain in right iliac region at 9 A. M.; at 12, a similar pain near the umbilicus; both relieved by change of position. Has a slight dull headache most of the day; and darting abdominal pains often recur. But she slept an hour before noon; has no thirst; no swelling or tenderness of abdomen; skin is moist and natural; and, on the whole, has had not an uncomfortable day.

Tuesday, 6 A. M. Wakes as from a good night's rest, having slept three and a half hours in all. The pulse fell to 93 at 5 this morning. Is now 104, rather weak. Urine \bar{z} viii drawn at 8 A. M. and at 2 P. M.; also at 10 P. M. Less pain in the bowels than yesterday. Patient slept half an hour at noon; feels stronger; says she "could sit up, if allowed to do so." I saw her this afternoon—seventy hours after the operation. Pulse 112; resp. 23. It is a very warm day, and patient complains of the heat. Dressed the wound anew. Skin already united wherever edges are in perfect contact. Here and there a drop of pus around the sutures. No tenderness or swelling of abdomen. The catamenia returned this evening.* She has had a very comfortable day. Tongue slightly coated, and breath acid. To take an enema this evening.

Wednesday morning. Patient slept quietly from four and a half to five hours last night. Pulse fell to 86 at 4 A. M.; is now (9 A. M.) 96, full. Urine \bar{z} vii at 6 this morning. At 11½ A. M. (eighty-five hours after the operation), she passed \bar{z} viii of urine *without aid*, for the first time; and needed no instrumental assistance afterwards—this secretion remaining normal during her recovery. Patient has had no chill yet; "feels better than yesterday;" countenance cheerful and animated, as though nothing unusual

* And continued three days.

had happened. No effect from the enema. Castor oil ʒij to be given at 2 A. M.

Thursday morning. Patient thinks she slept about five hours last night. "Feels stronger." Pulse 86; respiration 20. Changed clothing and bed-clothes at 10 A. M., for first time since operation.

I saw the patient at 3 o'clock P. M. Pulse 92; dressed the incision, and removed two of the five needles. The abdomen is now less concave on the sides of the ridge produced by the needles. Scarcely any suppuration. No tenderness or pain of abdomen.

Friday morning. Patient did not sleep at all last night, since the bowels have not been relieved by the oil, and a smarting where the needles were removed was felt most of the night. Pulse 94, at 9 A. M.; ranged from 83 to 104 during the day. Head feels pressed still. Skin hotter to-day; less so after an hour's sleep from 2 P. M.

Saturday morning (one week after operation). Patient took sixty drops of McMunn's elixir at two doses last night, and slept about three hours in all. Pulse 84; respiration 22, at 9 A. M. to-day; having just waked from half an hour's sleep.

I saw the patient at 3 P. M. to-day; changed all the dressings, and removed the three remaining needles. Skin firmly united, except at three points where the apposition had not been perfect. Very little suppuration. Appetite strong. A slight flatulent distension on right side of abdomen. Tongue slightly yellow. To take ʒij more of castor oil this evening, and thirty drops of McMunn's elixir.

The record was hereafter made only once in three hours.

Sunday.—Patient slept about four hours in all last night. Is stronger than yesterday, and wishes to begin to help herself. Pulse at 3 P. M. is 90; resp. 22. A large enema secured the free operation of the oil in the evening, and she slept all night "as well as she ever did."

Monday, 9 A. M.—Pulse 88; resp. 18. Perfectly comfortable in all respects.

Messrs. Conant, Fitch, and Wadsworth discontinued their attendance from this time.

Tuesday, 2½ P. M.—I found the patient very comfortable. Thinks there are "not ten happier ladies in the U. S.; and is not sure she would exchange conditions with any one of them even." Has a very slight headache. To take an enema to-night, and oil to-morrow if required.

Pulse from 90 to 100 during last twenty-four hours. Tongue clean; skin natural; lips bright red; appetite excellent; no tenderness or unpleasant feeling in abdomen. I change all the dressings. Wound perfectly healed in every part, except where the four ligatures come out. Only a drop or two of pus around them.

On *Wednesday* she had some headache, the bowels not being relieved, and

she having slept but little on Tuesday night. Another dose of oil on Wednesday evening produced a free evacuation on Thursday, and she was very comfortable for forty-eight hours afterwards.

On *Thursday morning*, she sat up in bed for the first time.

Saturday, Oct. 5th, two weeks after the operation. I saw the patient at 9½ A. M.—Pulse 85 to 94, since my last visit; is now soft and weak. Has sometimes felt a tenderness at the points where the tumour was adherent; less of this to-day. Tongue a little coated; less appetite. To take a pill at night of pil. hydrarg. and extract. hyoseyami. Only a drop of pus in contact with the ligatures. The small ones yielded a little to gentle traction.

To take rich broth, beef tea, or any simple nutriment she may prefer. May be helped into a chair, when all tenderness of the abdomen has subsided.

Sunday.—Sat up in her chair half an hour for the first time, being the fifteenth day after the operation.

Saturday, 12th.—A letter from her sister of this date says, "My sister has been very comfortable since the last report, except during the last forty-eight hours, during which time she has at intervals had considerable pain in the right iliac region; but no tenderness on pressure, except at a point corresponding to the position of the ligatures on that side. She has sat up from one-quarter hour to an hour, as she felt inclined, every day this week. Her appetite is very good."

This pain continued four days (or to the 14th), but affected neither the pulse, appetite, nor tongue, and never afterwards recurred.

Wednesday, 16th (twenty-five days after operation). Saw the patient this afternoon. She has sat up from one to one and a half hour daily of late. Has gained flesh and strength since last visit. Has stood upon her feet, but not yet walked. Has a better appetite than usual when in her best health. Tongue clean; abdomen is now convex, and well formed. Bowels are moved once in forty-eight hours by a small dose of oil. Only three short straps were left across the incision, it now being firm enough to rely upon. A small compress is still retained to protect the ligatures. I apply gentle traction to them separately. They seem to lift the abdominal walls *alone*, but do not come out nor produce any pain—to be pulled upon very gently every day. Patient not to walk before the end of this week (four weeks in all), and then with a staff to incline the trunk forwards and relax the abdominal muscles.

30th (forty days after the operation). A report of this date says, "My sister is very well; she says she was 'never better in her life.' Has taken no medicine, nor felt any discomfort for the last fortnight. Dr. Jarvis says her countenance is better than for a year before, and he thinks she has gained ten pounds of flesh. She has not been out yet, but sleeps up stairs, and has resumed all her former habits. None of the ligatures have yet come away."

Jan. 6th, 1851.—A letter of this date from the patient herself, in answer to several inquiries by myself, gives a full account of her state at that time. And, since commencing this report, another letter has been received, stating that her health continues “precisely as then.”

“My health (thanks to yourself) is perfectly restored. I have not had the slightest drawback since your last visit, except an attack, of which, at your request, I will give an account.

“The first ligature came away on the 7th of November, and the second on the 16th—both of them from the left side. The third came away on the morning of Nov. 19th, with perfect ease, and, unlike the others, brought the knot (loop), with it.* Half an hour afterwards, I was seized with a severe pain over the surface of the abdomen, and which, at the end of an hour, seemed to settle in the right iliac region, where the ligature was detached. Dr. Jarvis was called in at noon, and applied fomentations to the abdomen, and gave a dose of castor oil, and frequent doses of McMunn’s elixir. In the evening leeches also were applied, the pulse then being 121. The pain occurred at intervals, and continued severe for twenty-four hours. In four or five days, I was quite well again. The day before, I had stepped into the garden to take up some bulbs, but was well guarded from exposure, and know of no cause for the attack. The aperture around the ligatures closed up at once. The cicatrix of the incision is now precisely five inches in length. The catamenia not restored. No disagreeable sensations in the parts connected with the tumour. I have danced once, and felt no inconvenience therefrom.”

Description of the tumours removed.—1st. The large mass first removed now resembles, as a whole, in form and relation of parts (it being collapsed), the foetal membranes enclosing the placenta—the more solid part corresponding to the latter. Its vertical diameter is 12 inches, its transverse $9\frac{1}{2}$ inches; its original form being ovoid. The enclosed portion is oval and thin; being $6\frac{1}{2}$ by $4\frac{1}{2}$ inches in diameter, and $2\frac{1}{2}$ inches thick.

The external surface of the sac is perfectly smooth and nacreous in appearance, except two inches square on the right side and a little less on the left (precisely where the “friction feeling” was perceived)—these surfaces being covered by the recently formed bands I had ruptured in breaking up the adhesions of the sac. An epithelium, but no distinct serous membrane, can be detected by one of Chevallier’s largest microscopes. The Fallopian tube, $\frac{3}{16}$ inch in diameter, extends to the top of the solid tumour, accompanied by a large vein, and an artery of the size of a wheat straw. The protuberance on the solid portion, felt through the abdominal walls, was a distinct sac, as was supposed; its fluid having a specific gravity of 1023, and containing, like that of the large sac, a large quantity of albumen, and scales of cholesterine. The sac itself is $\frac{3}{16}$ inch thick.

* She does not account for the fourth ligature at all.

Its *internal* surface presents several large veins; and is covered quite extensively in patches by recently exuded plasma. In general appearance, it resembles a mucous membrane.

The weight of the whole mass is 2 lbs. 3 oz. avoirdupois.

2d. The *right* ovarian tumour is one and a half inch long by one and a fourth inch in diameter, consisting of a sac containing 3iv of a reddish fluid; and the proper stroma of the organ, hypertrophied and indurated, and presenting a lobulated and warty appearance. Its whole weight is 3x.

The preceding case has suggested the following remarks:—

I. So far as the writer is aware, Miss G——'s case is *unique*, as far as the successful removal of both ovaries at the same time by the large peritoneal section is concerned. It is also scarcely less singular, for the very slight disturbance of any kind from the operation. The *pulse* never rose above 120; never above 115 after the first twenty-four hours had elapsed, except for a few minutes on Sunday night. From Monday morning to Tuesday morning, it ranged between 93 and 114; Tuesday to Wednesday morning, between 86 and 112; Wednesday to *Friday* morning, between 88 and 104; Friday to Saturday morning, 83 and 100. It never rose subsequently above 97, and averaged 90—about her natural pulse. The *respiration* was 26 for half an hour when reaction was first established; and uniformly 23 or 24 during the first three days. It then continued at 22, till the pulse fell to 90; and then became 20. The *reaction* also was perfect in less than five hours, and was never excessive. Indeed, the patient may almost be said to have recovered without a single bad symptom; at least without any severe symptoms peculiar to such an operation; or which might not have occurred to one of her delicacy of constitution, from even a slight cause. Hence the *medicinal* part of the after-treatment was decidedly expectant. The suppuration could not have amounted to more than 3iss in all, during recovery.

II. The almost unfailing aid, in the diagnosis of ovarian diseases, which is afforded by the present advanced state of pathologico-anatomical and surgical science, as compared with the obscurity resting over this subject till very recently, is worthy of remark. It is, however, impossible to form any rational conclusion as to the adhesions or non-adhesions of a sac thus filling the abdomen, without previously evacuating it by tapping. Even then, adhesions may exist without being detected. The "friction-feeling" is more distinctive than any other sign short of evident immobility of the sac; and was, I think, detected in this case on the first examination after (and in less than thirty-six hours after) the adhesions had formed.

The reason assigned for the absence, on the second examination, of the solid tumour felt per-vaginam et per rectum eleven days before, proved to be correct. The fluctuation perceived from these passages at the first examination was produced by the fluid in the large sac, which, being less distended at the second, did not fall so low as to be reached. Thus the inferences from the

positive signs at first, were rightly regarded as being confirmed by their absence afterwards—the circumstances having changed.

III. The temperature and hygrometric state of the air in the room at the time of the operation are very important matters. Certainly, the peritoneal surface is *more nearly* in its natural condition when exposed to a *warm and damp* atmosphere, than if the latter be cool or dry, or both. A still higher temperature than 80° would probably be better for the serous membrane; but it could not long be tolerated by the lungs either of the patient or the operator. It was observed that the surface longest exposed became somewhat livid from incipient congestion; and, had even a less protracted exposure to a dry or a cool atmosphere occurred, I doubt not this effect would have been still more marked, and a decided congestion, which is but a single step from inflammation—from peritonitis—might have occurred. Moreover, a sudden change of temperature, even though a slight one, *after* the operation, and whether general or local, is replete with danger. Hence the temperature was kept at 78° to 80° , till all danger of inflammation had disappeared; and the warm water dressing was kept constantly upon the abdomen, as long as any dressing was needed.

That the alimentary canal be also empty and collapsed at the time of the operation, is an important consideration; since thus protrusions are avoided, or easily reduced if they occur. Hence the propriety of a dose of oil thirty-six hours before the operation, and fluid nutriment afterwards.

IV. Several difficulties I have not seen adverted to, in reports of this operation, occurred. 1st. The skin, being very tense, retracted about three inches when divided, and also drew the next layer (one and a quarter inch thick, as before stated), as it was divided, down to an almost level surface; and thus rendered it impossible to keep the precise position of the middle line in the eye, through the whole length of the incision—nine inches. 2d. The fascia transversalis and parietal peritoneum were so atrophied by pressure as not to be recognized as distinct layers either during or after the operation, instead of being thickened as usual. 3d. Violent efforts to vomit, *i. e.*, spasmodic action of the abdominal muscles, have been not unfrequent in other cases; and may not, therefore, in this, have been occasioned by the anæsthetic. 4th. The thickness of the abdominal walls (one and a quarter to one and a half inch) produced much difficulty in coaptating the edges of the incision. Large needles, two and three quarter inches long, were required; they must also be curved, and therefore annealed; and thus their points were spoiled. Still the latter must be carried through the walls obliquely, so as to pass between the abdominal aponeurosis and the peritonæum, while, at the same time, the former was hardly thicker than stout letter paper, and the latter not certainly recognizable at all. Still the risk of peritonitis was not partially enhanced by the delays thus produced; since they occurred either while the sac still protected the peritoneum, or while the wound was being closed.

V. The appearance of the catamenial discharge,* seventy-two hours after both ovaries had been removed, and its continuance for three days, appears, at first sight, to contradict the idea, now generally entertained by physiologists, that these organs originate the *nisus* which thus manifests itself. I should, however, consider the discharge, under such circumstances, as a mere uterine hemorrhage, resulting from the congestion of that organ produced by the operation; and as, therefore, being a most salutary phenomenon, and a highly favourable symptom. A patient on whom I operated, three years since, for an extensive laceration of the perineum, had a similar phenomenon occur on the third day afterwards; which also continued three days, and prevented the complete success of the operation. In that case, also, I think the exciting cause of the hemorrhage was of the same general character; the preceding regular period having ceased a week before the operation. I shall expect to learn that the theory above alluded to is confirmed by the future history of the present case.

The fact that the urine became free (3viii every six hours) within forty hours after the operation, and continued so uniformly afterwards, was regarded as highly favourable at the time; and this, together with the fact that, at the end of eighty-five hours, she evacuated the bladder without instrumental assistance, was thought to be inconsistent with the idea that peritonitis was then impending.


VI. The pain complained of October 5th was probably produced by the patient's leaning upon her elbow in bed; and that in the right iliac region, which occurred on the 10th, and continued four days, I should attribute to her efforts as she sat up longer each day, and to the pressure on the uterus, and perhaps also on the ligatures directly of the small intestines, while thus erect in bed. A somewhat constipated state of the bowels is another element in the causation perhaps worthy of notice.

The violent attack of pain on the 19th of November may or may not have been excited by the removal of the last ligature that morning. I incline to the opinion that it *was* thus excited, though no undue force was applied to the ligature, and it is improbable that the peritoneum was at all implicated. It appeared to me possible that some, at least, of the ligatures were adherent to the abdominal walls alone, at my last visit, five weeks before (October 16th). But, in regard to the two ligatures first brought away, this opinion is shown not to hold, since they were both *untied* before they left the pedicle. The last ligature, however, *slipped off*, as was shown by the loop still remaining whole; and, therefore, might have been retained by granulations in the abdominal walls for days previous to its detachment. I judge this was the fact, and that a nerve being also implicated in its detachment, accounts for both the superficial character of the pain, and the rapid culmination of the attack. I am, however, by no means tenacious of this explanation.

But what became of the fourth ligature, of which no account is rendered

* Its last regular appearance had been ten days before.

by the patient? I doubt not that it was removed together with one of the larger ones. In all four of the ligatures, there were sixteen threads of silk. The last included two of these; and I doubt not one of the preceding was made up of eight threads, and the other of six. Two ligatures, thus removed together, would of course lie side by side when drawn out, however distant their internal extremities may have been before; and the patient could not be expected to remember to count the threads as they were removed. I shall doubtless request the next patient to preserve them for subsequent inspection.

VII. The pedicles were divided thus,  : the *oblique* lines representing the cut edge, the circle (o) the puncture made by the needle, and the dotted line the level of the ligatures—in order that the loops might *slip off* on applying traction at the proper time, and thus the ligatures be the sooner detached. It appears, however, that only one of them became detached in that way, the rest having been previously *untied*. The one that *slipped*, also, was the last to come away; but the supposition has already been hazarded that it may have left the pedicle, and probably did, some days at least before it was detached. Whether, therefore, my idea as to dividing the pedicle will prove of any practical value, still remains to be decided. And whether the loop usually slips off, or cuts out, or becomes untied, after this operation, is a question previous reports do not enable me to decide, and which I now have under investigation.

VIII. The success of the operation I attribute to the fortitude and confidence of the patient; the comparatively slight adhesions of the diseased mass; the temperature, &c., of the room at the time and subsequently; accurate coaptation of the divided abdominal walls; and the judicious after-treatment of Dr. Jarvis, seconded by the faithful attentions of the three young gentlemen before named. I am positive that as much care and skill are necessary in closing the incision properly, as in performing the preceding operation.

Whether the operation of ovariectomy is ever justifiable, is a question which would certainly be out of place here. It is the writer's opinion that, if the patient's general health is rapidly failing (but not already too far prostrated), and the tumour is found to be not extensively adherent, so far as all the known methods, taken *together*, can decide that question, the operation *is* justifiable; *provided* the patient, after fully understanding its nature, strongly desires to have it performed, and has strong hopes of recovery therefrom. But it is an operation never to be urged, nor to be undertaken by an operator whose care does not include the minutest particulars, both prior and subsequent to its performance, which can affect its results.

And I cannot close without alluding to the obligations under which the medical profession in our country has been placed, by the full and precise reports of his now numerous operations for the removal of ovarian diseases, which Dr. W. L. Atlee has given from time to time in this Journal. But for these, my patient might perhaps not have been rescued from an early

death. For only accurate and minute reports of such cases are of any practical value to others; and this is the writer's apology for the length of this communication.

DART. COLLEGE, Feb. 1851.

NOTE.—It is a fact, certainly not without interest, that the first patient on whom the operation of ovariectomy was performed in this country was an *aunt* of Miss G. (though by *marriage* only), whose case has just been detailed. The operation alluded to (being the *minor* operation) was performed on the 5th of July, 1820, by Dr. Nathan Smith, Professor of Surgery in Dartmouth College, and was successful. The patient was a Mrs. Strobidge, of Norwich, Vt., *ætat.* 33.

For an account of the case, see "Medical and Surgical Memoirs," by Nathan Smith, M.D., Baltimore, 1831.

The *year* is singularly enough omitted in the report of the case. I have ascertained of Dr. H. Hatch, of Burlington, Vt., who was present at the operation, that it was performed thirty years ago last July.—E. R. P.

ART. XII.—*Cases in Surgical Practice.* By R. H. McILVAINE, M. D.,
Charlotte, N. C.

CASE I. *Adipose Sarcoma, involving the deep structures of the thigh.*—M. H., *æt.* 14, has been afflicted since birth with an abnormal growth upon the right thigh. When first noticed, the tumour was about the size of a pigeon's egg, situated upon the outer side of the thigh, about midway between the groin and the patella. It has been constantly enlarging ever since. Its present appearance is as follows: Commencing at a point about one inch below Poupart's ligament, it extends to within about the same distance of the upper margin of the patella, and from a line on the inside of the thigh, corresponding with the track of the femoral artery, to about the outer edge of the vastus externus muscle, thus encircling about three-fourths of the largest part of the thigh. The following are the dimensions of the tumour, ascertained by comparing the circumference of the right with that of the left thigh.

	Right.	Left.
One inch above the patella,	12 in.	9 $\frac{5}{8}$
Junction of middle and lower third,	15 $\frac{1}{2}$ "	10 $\frac{3}{4}$
Middle of the thigh,	16 $\frac{3}{4}$ "	12 $\frac{3}{4}$
Junction of upper and middle third,	15 $\frac{1}{8}$ "	13

The motions of flexion and extension of the leg show that the tumour is attached to the *quadriceps femoris* muscle, outline of the tumour distinctly marked above and below, but on the sides it is impossible to determine accurately its extent. *Diagnosis simple adipose tumour.*

Oct. 7th, 1848.—I proceeded to remove the tumour, assisted by Drs. Williamson, Strong, Hutchinson, Gibbon, Clawson, and S. F. Gilmer. The patient being first placed under the influence of chloroform, I made an incision from the upper to the lower margin of the tumour, in the course of the

rectus muscle, penetrating into the substance of the tumour. This was joined by another commencing and ending at the same point, and curving outward so as to include a piece of integument about two inches in width at the widest part. The sartorius muscle appeared, covering the upper and inner part of the tumour, and thinned out to about three inches in width. Turning out the tumour from under this muscle, I proceeded to follow it to its attachments between the crureus and vastus externus. These attachments were very extensive and firm, and required for their separation a dissection deep into the muscular substance of the outer part of the thigh. The tumour was completely separated in six minutes. But little blood was lost. No artery required ligation. The wound was dressed with five sutures and adhesive straps. Union by first intention took place throughout the greater part, but the cure was retarded by a succession of abscesses, beneath the vastus externus muscle, which discharged large quantities of grumous pus, mixed with the detritus of the wound. These were followed by troublesome sinuses, one of which was laid open across the belly of the vastus externus muscle. The cure was perfect by the 1st January, 1849. No muscular weakness remaining.

Developed originally, as this tumour seems to have been, beneath the fascia lata, it appears to have gradually extended in those directions in which there was least resistance until it involved that membrane, so that it was distinguishable only at the margins of the tumour. It was attached extensively to the sartorius, rectus, crureus, and vastus externus muscles. Weight three and a quarter pounds avoirdupois.

CASE II. *Adipose Tumour.*—Mrs. S., æt. 50, has been afflicted for fifteen years with a tumour upon the back of the left shoulder. At present, it extends from within two inches of the spine to about the insertion of the deltoid muscle upon the arm. Gives no pain, but from its size and weight is becoming exceedingly inconvenient.

April, 1847.—I proceeded to remove the tumour, assisted by Dr. Butt of Lincolnton, and Mr. (now Dr.) J. A. Shuford, medical student. The operation was commenced by an incision extending from near the spine of the third dorsal vertebra to the lower margin of the tumour upon the arm. This was joined by another commencing and ending at the same points, and including between them a large piece of integument. The tumour was then turned out, being found to adhere slightly to the deltoid and long head of the triceps muscle. The operation was completed in one minute. No vessel required the ligature. The wound was closed with sutures and adhesive straps, and in ten days the cure was perfect.

The morbid mass weighed six pounds, and presented all the characters of the simple adipose sarcoma.

CASE III. *Strangulated Inguinal Hernia — Operation — Reduction impeded by enlarged Mesenteric Glands—Recovery.*—Oct. 11th, 1849. Called to Jim, a negro, æt. about 60, property of Daniel Mills. Patient has a large inguino-scrotal hernia of the right side, which has come down occasionally for a number of years. On the evening of the 7th instant, the hernia came down, and the patient not being able to reduce it as usual, Dr. Ardry was sent for. The doctor made repeated attempts, during the next twenty-four hours, to reduce the protrusion, but not being able to succeed, Dr. Williamson was called. At Dr. W.'s suggestion, the tobacco enema was administered, and during the state of extreme relaxation which followed, a vigorous effort was made at the taxis, but without success. I was then sent for, with a view to operation.

I found the patient with a good pulse, free from excitement, with only occasional efforts at vomiting; bowels obstinately costive; no additional efforts to return the bowel were deemed advisable, and at half past ten o'clock A. M., I proceeded to operate, assisted by Drs. Ardry and Williamson, and Mr. Parks, medical student. The several coverings of the hernia were carefully divided upon the grooved director, until the sac was exposed; upon opening this, about 3j of bloody serum escaped. The bowel was of a light chocolate colour. It proved to be a piece of the small intestine about twelve inches long, with its mesentery, in which were a number of enlarged glands. The stricture was divided upon the finger by means of a probe-pointed bistoury; an attempt was now made to return the bowel, but without success. The stricture was further divided; but still the intestine could not be returned. The mass of enlarged glands seeming to form a body too large to pass through the opening, the efforts to reduce were continued, with intervals of rest, for about three-fourths of an hour, when, after again enlarging the opening very considerably, the hernia was reduced. Great fears of inflammation were entertained from the amount of handling to which the parts had been unavoidably subjected.

The wound was then closed, and the patient put to bed, having been upon the table about one hour. Ordered ol. ricini f3ss, with tinct. opii gtt. x. No appreciable change in the pulse; patient not prostrated by the operation. I here resigned the case to the care of the attending physicians.

Oct. 25th.—Dr. Ardry reports that, for forty-eight hours after the operation, the symptoms were threatening. On the second day, the abdomen was tympanitic, the pulse feeble, quick, and frequent, no passage from the bowels. Large injections were successful in relieving the bowels, after which the case put on a more favourable aspect, and the patient was soon convalescent.

CASE IV. *Pseudo-Membranous Croup — Tracheotomy — Death.* — Dec. 20th, 1849.—Called to W., æt. two years, in the advanced stage of croup; the total loss of voice, and peculiar cough, convinced me that it was of the pseudo-membranous variety. Administered at once ant. et pot. tart. gr. j, with pulv. ipecac. gr. x. This produced emesis at the end of half an hour, with the aid of a feather in the fauces. The patient appeared somewhat relieved, and I left for a few hours, directing repeated doses of syrup. scillæ comp., if the symptoms became aggravated.

On my return at four o'clock P. M., found my patient much worse, and during the suffocative paroxysms the danger of dissolution seemed imminent. I immediately administered a very active emetic, and, after waiting in vain for its operation for more than half an hour, I proposed, as the only hope, to perform tracheotomy. The consent of the parents was readily obtained, and at half past five P. M. I proceeded to operate. I had a bad light, inexperienced assistants, and, the child being fleshy, I was somewhat embarrassed in the operation, but happily succeeded in establishing a false opening in time to prevent suffocation, the danger of which had become extremely imminent. Indeed, when the trachea was opened the child seemed at its last gasp. I maintained the opening pervious by means of a tenaculum and probe, until the oozing had ceased, and then, clipping out a small portion of one or two of the rings with the scissors, the child was enabled to breathe freely without assistance.

The patient rallied favourably, and seemed much relieved for several hours. Gradually, the breathing became more difficult. The introduction of a probe, wrapped with lint and dipped in a solution of nitrate of silver or in simple

water, afforded temporary relief. Toward morning, it became evident that the disease had extended below the opening, and although small bits of false membrane were coughed up, the relief was only temporary, and at 6 A. M. it became evident that all hope must be abandoned. The patient expired of suffocation at 10 A. M., sixteen hours after the operation.

CASE V. *Encysted Tumour, containing Feces.*—Dec. 1849, consulted on the case of Spencer, negro, æt. 30, the subject of anal fistula for about ten years. The patient reports that, about seven years ago, a tumour appeared between the anus and point of the coccyx. When first discovered, it was about the size of a hickory nut. It continued to increase till about four years since. Has never given much pain till about a month ago, when it broke and discharged "matter" for a few days, and then cicatrized. At present, the tumour is about the size of a large duck's egg, situated in the mesial line, immediately in front of the point of the coccyx, not tender on pressure, and exhibits a cicatrix about the centre of the prominence—the seat of the ulceration alluded to. Diagnosis, *adipose sarcoma*.

Feb. 23d, 1850. I proceeded to remove the tumour, assisted by Drs. Dunlap and Hutchison. The first incision laid open a cavity filled with *feces*, which I proceeded to turn out. I then explored the cavity, with a view to discover the opening through which the fecal matter had entered, but could detect no communication with the rectum. Satisfied that the cavity was a closed sac, the indication was plain, and I proceeded to dissect it out. This was accomplished without any wound of the continuity of the sac, except a very small snip with the point of the scissors. It was lined with a membrane having very much the appearance of the inner lining of the turkey's gizzard. The wound was closed with sutures, and dressed with a compress. The cure was accomplished in a few weeks principally by granulation. The fistula was operated on shortly after, and the patient discharged cured on the 26th March.

The origin of this tumour I suppose to have been as follows: An ulcer having perforated the coats of the rectum, fecal matter was forced out and impacted in the cellular tissue between the rectum and coccyx. Here, not giving rise to sufficient irritation to secure its discharge by ulceration, it became encysted. In the course of time, the original ulcer cicatrized, thus closing the communication between the rectum and the sac. This view is confirmed by the existence of a distinct cicatrix at the upper part of the sac, at the point of its closest connection with the rectum.

REVIEWS.

ART. XIII.—*Report of the Sanitary Commission of Massachusetts, made by the Legislature in 1850.* Printed by order of the Legislature. Boston: Dutton & Wentworth, State Printers, 1850. 8vo. pp. 544.

THE subject of a sanitary survey is not entirely new in this State, although it may not be familiar to all of its people. It was first brought before the American Statistical Association in the spring of 1847. That society referred it to a committee, with orders to prepare a memorial to be presented to the legislature, asking that measures be taken to ascertain the sanitary condition and resources of the commonwealth, and setting forth the reasons for, and advantages of, such an undertaking. This memorial was accepted by the association, and ordered to be presented to the legislature by the same committee. This was done in January, 1848. The House of Representatives referred the matter to the committee on the judiciary, who, after giving the friends of the measure a patient hearing, concluded that, as the subject was new both to the legislature and to the people, it would be inexpedient to undertake the proposed survey until some pains should be taken to inform the public of its plans and advantages; they therefore advised that a large edition of the memorial of the Statistical Association be printed for general distribution, and that then the whole matter be referred to the next legislature. The memorial was printed as House Document No. 16 for 1848, and very generally distributed through the State.

The Massachusetts Medical Society, at its annual meeting in May, 1848, took this matter into consideration, and referred it to the counsellors, to take such action as they might deem proper. The counsellors voted to memorialize the legislature, praying them to grant the petition of the Statistical Association. In January, 1849, the counsellors sent to the legislature a memorial, urging, at considerable length, this measure upon the government, and giving the reasons for which it seemed to them it should be adopted.

This memorial of the medical society was referred to a select committee of the legislature; and on their recommendation a large edition of this document, and the memorial of the Statistical Association of 1848, were printed for distribution among the members and people. At the end of the session in May, a resolution was passed authorizing the Governor "to appoint three persons to be commissioners, to prepare, and report to the next general court, a plan for a sanitary survey of the State, embracing a statement of such facts and suggestions as they may think proper to illustrate the subject." The commissioners were to have two dollars a day for the time they should be employed, and also to be paid for their expenses of travel, stationery, and postage. They were authorized to expend fifty dollars in books on this subject, which should be deposited in the State Library. Five hundred dollars were appropriated to meet the whole expenses of this commission.

The governor appointed Lemuel Shattuck, Esq., of Boston, Jehiel Abbott, M. D., of Westfield, and Nathaniel P. Banks, Esq., of Waltham, as members of this sanitary commission.

The labouring oar of this whole matter fell principally upon Mr. Shattuck, the chairman, who made the inquiries, and wrote the report, with the aid of his associates. Their report was presented to the legislature in April, 1850. It was then ordered to be printed. This was finished in December, 1850, and offered to the legislature in January, 1851, for their consideration and further action.

Thus it is seen that this matter has been before three successive legislatures; and after three years of urgency from the friends of the measure, it is matured so far as to have a plan brought forth in a tangible shape, and offered to the fourth legislature for their adoption. The legislators of Massachusetts surely will not be accused of any rashness or indiscreet haste in undertaking to ascertain the sanitary condition of the people of that intelligent and generous commonwealth.

This report of the commission is printed in an octavo volume of 544 pages, in the style of the reports of the Natural History Survey, and is now ready for distribution, or disposal otherwise, at the order of the general court.

The commission, in their plan, have not confined themselves to the original purpose of the proposers of this measure, which, like the British inquiries of a similar nature, was merely to inquire into the actual sanitary condition of the people, and ascertain the various influences that acted, for good or evil, upon their health, and when those facts should be made known, further plans would be suggested and adopted for the future well being and health of the people. But they have examined and discussed at great length all the direct and collateral topics connected with the matter of general and public health, and shown with great clearness the advantages that will result from the investigation of the connection between outward circumstances, domestic conditions, and personal habits, and health and life.

The report first contains a history of the sanitary movements abroad, and shows what has been done, and with what advantage, in other nations. Going back to ancient times, Mr. Shattuck informs us of the sanitary legislation and customs of Greece and Rome, and, coming down to modern times, he gives us a similar history of Great Britain, France, and Germany.

Very active and effective measures have been taken by some of the European governments to ascertain the sanitary condition of their people, and in all cases they have revealed such a state of things, in their outward circumstances or in their domestic life, as to leave no doubt that many of the causes of sickness and death existed and were removable, and consequently that much of the sickness might be prevented and many deaths postponed.

The report quotes from the sanitary documents published in Great Britain, and shows that there are frightful differences in the vitality of people in different districts and in different conditions of life. There are remarkable differences, in this report, between the town and country. Thus, it is ascertained, from a very extensive survey, covering about seven millions of people, that the annual deaths are, in the city districts, 27,073, and in the country districts 19,300, among one million of persons living in each class of places. The rate of mortality was one in 37 in the city, and one in 52 in the country. Here, then, is an annual excess of 7773 deaths in each million of persons living in the large and dense towns over the number of those who die in the country, in an equal population; and this excess must be chargeable to something connected with the density of population.

Some diseases prevail more, and are more fatal, in the towns than in the country. In a million living in each class of places, the mortality (average of four years) was as follows:—

	City.	Country.
Total deaths	27,073	19,300
From Consumption and scrofula	4,515	3,761
“ Small-pox	1,045	507
“ Measles	914	354
“ Scarlatina	988	478
“ Typhus	1,254	998
“ Epidemic and contagious	6,013	3,422
“ Teething	616	120

There are also great differences of mortality in the different parts of the same city, as, according to Mr. Chadwick, in London, in St. George's, Hanover Square, the average age at death is of the gentry 45, and of the labourers 27 years, while in St. Giles the ages are of the gentry 50, and of the labourers 17 years.

These last differences are connected with the supply of water, cleansing the streets, and ventilation of the streets and dwellings. Dr. T. Southwood Smith says that, “where fever is frequent, there is uniformly a bad drainage, bad sewerage, a bad supply of scavengers, and a consequent accumulation of filth.” “If you trace down the fever districts on the map, then compare that map with the map of the commissioners of sewers, you will find that, where these commissioners have not been, there fever is prevalent, and on the contrary, wherever they have been, there fever is comparatively absent.”

“Dr. Lyon Playfair calculates that, for one unnecessary death, there are also 28 cases of unnecessary sickness;” consequently, there are annually 217,668 cases of unnecessary sickness in each million of inhabitants of the large towns.

After reviewing the sanitary movement in Great Britain, Mr. Shattuck says that it is thus proved—

That the annual deaths in 10,000 people are 153 in the best, and 358 in the worst districts.

That the various forms of diseases are created, aggravated, and propagated by the narrow streets, crowded houses, filth, and the foul air that proceeds from decomposing animal and vegetable matters, whether in town or country.

That diseases and death are more frequent in the cities than in the country, and more in the narrow streets and crowded houses than in the wide and open streets and ample houses of the same city; and that this excess of disease and mortality falls mostly upon infants and persons between 20 and 30 years of age.

That the longevity of persons in bad, is 5 to 25 years less than in good situations, and that the former have a lower condition of life, less health and strength, and less productive power than the latter.

That these differences of life and death are removable by the removal of the noxious agencies and circumstances.

That the annual mortality of Great Britain might be reduced from one in 44 to one in 50 by the removal of these noxious causes.

That children born and trained amidst these noxious influences have a lower degree of physical, mental, and moral power, and hence they are comparatively feeble, sick, idle, improvident, vicious, and short-lived.*

It is now very natural to inquire, whether similar conditions and circumstances do not exist, to a greater or less extent, in this country, and whether they do not produce the same depression of life, and the same excess of disease and mortality, in Massachusetts as in England.

* Report, p. 46, &c.

The sanitary legislation of Massachusetts extends as far back as the year 1692. From that time to the present, laws have been enacted for the prevention or the removal of nuisances, &c., which might interfere with public health; for the establishment of drainage and sewerage, with reference to small-pox, and other contagious diseases, to insanity, and quarantine; and for the election of boards of health.

The whole sanitary legislation of this State, past and present, has been unstable, uncertain, and subject to many changes, which are sometimes made without apparent good reason. The laws in regard to this subject, as they now stand, form a very imperfect system, and are inadequate to the purposes for which they were made. They have been subjected to so many alterations, to repeals, partial or entire, that it is not now easy to determine what is in force.

In order to remedy this matter, the commission propose to establish an entire new law or code of laws, which shall cover the whole ground of health, sanitary police, and everything which has a direct or indirect connection with man and his powers of body.

Mr. Shattuck gives a succinct history of the epidemics that are known to have prevailed in New England since its first settlement. But, of course, this history is very imperfect for the want of due observations and records. This history is confined to the epidemics which have especially attracted attention, and excited alarm, and have had an observer willing to write their record. But there have doubtless been many epidemics that have had no observer to notice them, and no historian to record them and bring their history to us.

Epidemics must constitute only a part of the diseases that affect the people. Sporadic diseases, of every sort and everywhere present, in some form or other, are the principal destroyers of the health and the life of man. They have no record. It is not known how frequently they appear, nor how fatally they operate.

"For the last forty years, notwithstanding the mass of medical literature that has been published, less definite information has been obtained concerning epidemics than in the previous periods. The almost entire neglect of records, prior to the adoption of the registration system, renders it difficult to give anything approximating to an accurate view of the subject. If a careful examination were made into the history of each town, many important facts might be gathered. But it is curious and lamentable to observe, in looking over our published local histories, how little attention has been paid to this matter. *The history of the health of the people* should be regarded as the most important part of history. Yet it has generally been considered unworthy of notice, or, if noticed at all, merely among the incidental matters of little consequence."*

This is the object of the proposed sanitary survey: to ascertain the diseases that appear and prevail in the various districts and situations, their frequency and intensity, their fatality, and the circumstances and habits that are connected with them.

Without pretending to give a complete history of these matters, or even approaching it, Mr. Shattuck alludes to the influences of various circumstances upon the production and results of disease. He states a few facts in regard to seasons, occupations, and domestic conditions, to show that they certainly have some, and probably great, influence on human health and life, and to show that these matters are worthy of further and minute inquiry, in order to determine exactly the measure and manner of their influence, and whether they can be modified or controlled by the art of man.

* Report, page 80.

So far as can be determined from a comparison of the Registration Reports from the rural districts of Massachusetts for seven years, with the bills of mortality of Boston for ten years, the country is the more healthy in the summer, and the city in the autumn, both nearly alike in the winter and the spring. August and September are the most fatal months in the city, on account of the greater prevalence of diseases of the digestive organs. September and October are the most fatal months in the country, on account of the greater prevalence of fever.

The nature of the occupation has doubtless much influence on health and life, but to what extent remains to be determined by further investigation. The seven annual Registration Reports of Massachusetts give tables of the average ages of males engaged in several professions, who were over twenty years old at death. These are condensed in the report into one table,* which we here quote :—

Deaths.	Occupation.	Average age.	Deaths.	Occupation.	Average age.
4737	Farmers	64.89	46	Bakers	46.69
39	Hatters	58.79	81	Cabinet-makers	44.80
110	Coopers	57.39	73	Stonecutters	44.46
114	Clergymen	56.64	17	Paper-makers	44.29
55	Lawyers	55.47	902	Shoemakers	43.41
137	Physicians	55.	1609	Labourers	42.79
287	Blacksmiths	54.49	1061	Seamen	42.47
613	Carpenters	51.16	110	Painters	42.36
323	Merchants	50.73	138	Fishermen	41.63
65	Tanners and Curriers	49.90	115	Manufacturers	40.48
135	Masons	48.55	110	Mechanics	37.20
213	Traders	46.79	34	Printers	36.91

These few facts render it very certain that there is a difference in the value of life in the different occupations, and very probably, that this difference is constant.

The diseases or causes of death differ in different situations, and especially in city and country. Mr. Shattuck has analyzed the causes of 57,484 deaths, in the rural districts of Massachusetts, from 1842 to 1848; and of 25,795 deaths in the city of Boston from 1840 to 1849.†

Among 10,000 deaths, in each place or class of places, from known causes, there died of the various classes of disease—

	Country.	City.
Zymotic or endemic	2755	3159
Epidemic and contagious		
Of uncertain seat	1299	1398
“ Nervous organs	905	927
“ Respiratory “	2959	2240
“ Circulatory “	192	173
“ Digestive “	490	1221
“ Urinary “	45	30
“ Generative “	114	158
“ Locomotive “	51	53
Skin	16	23
Old age	768	246
Violence	406	372
	10,000	10,000

* Report, p. 87.

† Report, p. 90.

There appear to be many more deaths from the zymotic diseases, and from diseases of the organs of digestion and generation, in the city than in the country, but there seem to be many more deaths from pulmonary diseases and from old age in the country than in the city. The other classes of causes present no very marked difference in their effects upon these places.

The proportion of deaths to those from all causes was greater from 48 and less from 44 of the specified causes in the city than in the country.

These differences were the greatest from the following causes.

Deaths from certain causes among 10,000 from all causes:—*

	Country.	City.		Country.	City.
Dysentery	420	370	Whooping cough	89	133
Fever, typhus	909	645	Measles	73	228
Apoplexy	102	73	Small-pox	19	134
Paralysis	166	79	Thrush	2	38
Consumption	2389	1471	Atrophy	36	201
Old age	768	246	Debility	28	103
Colic	26	5	Hydrocephalus	212	367
Peritonitis	12		Pneumonia	441	634
Drowned	142	83	Enteritis	155	205
Cancer	123	56	Teething	42	219
Cholera	52	281	Child-birth	104	151
Fever		65	Intemperance	45	78

These are not stated in the report as the sum of all the knowledge that is desirable or obtainable, nor as establishing any law, but only as indications of differences, which should lead to further and more varied inquiry. But the facts, so far as known, lead these commissioners to state—†

That there is a great difference of life in various localities, circumstances and conditions of men and society.

That there are causes of unnecessary sickness and premature death here among us as well as in Europe.

That there is need of legislative action to provide a remedy for the removal and the prevention of these evils.

That typhus fever, cholera, dysentery, small-pox, and other epidemics—consumption, and other fatal diseases—constantly or frequently prevail in this State.

That these active causes of diseases are increasing among us.

And that a thorough investigation is needed to ferret out the whole extent and all the circumstances of disease and mortality; and to ascertain the exact relation of these events to other events and circumstances that may seem to be their causes. There is also needed a more appropriate and more effective system of legislation, which shall reach all the circumstances of life, and all the causes of sickness and death, and provide for the protection of the one, and the prevention and the removal of the other; and thus, by the ever present and strong arm of the government, secure to the people the means and opportunity of enjoying the highest degree of health and the longest life consistent with their nature and constitution.

For this purpose, the commissioners propose to repeal all present laws respecting health and sickness, and re-enact all that are useful and adapted to the wants and conditions of the present time, and add such others as are needed to complete the sanitary code, and establish a perfect sanitary police in this commonwealth.

* Report, p. 90, &c.

† Report, page 103.

The proposed law fills fifteen pages,* and is divided into forty sections. It embraces a plan for obtaining annual reports of the sanitary condition of every town and city, for the registration of births, marriages, and deaths; for the detection and the removal of nuisances; and for the regulation of burials.

Sec. 1.—Provides for the appointment, by the governor, of seven persons, who, together with the Governor and the Secretary of the Board of Education, shall constitute the State Board of Health. The seven are to hold their offices seven years, but one is to go out, and his place to be filled by re-appointment, or by another, in each year.

Sec. 3.—Provides for the election of a Secretary of this Board, who shall be the principal executive officer.

Sec. 4.—Requires that the Board of Health execute the sanitary laws of the State; decide all sanitary questions proposed to them by the State, or by towns; advise as to the location of public buildings; visit, and superintend the sanitary condition of the public charitable institutions; instruct the local Boards of Health as to their powers and duties; superintend the decennial enumeration of the people of the State according to the constitution; and make a report in each year to the legislature of the sanitary condition of the State. They are authorized to purchase books relating to public health, to the amount of fifty dollars annually, for their use and for that of their successor in office.

Sec. 6.—Requires the Secretary to keep the accounts of the Board; to make a sanitary survey of any town or district when directed by the Board; to superintend the registration of births, marriages, and deaths; to superintend the decennial enumeration of the people, and prepare the abstracts from the returns of population; to take charge of all the local reports from the several towns; to report to the Board annually the sum of the sanitary information received, and to diffuse among the people all this information, so that each town and family may profit by the experience and the wisdom of all the rest.

Sec. 8.—Provides for the appointment of local Boards of Health by the mayors and aldermen of the cities, and by the selectmen of the towns, in each of these several places.

Sec. 9.—Requires these local Boards to execute the sanitary laws of the State and the orders of the general Board, and, as far as possible, prevent sickness and prolong life by the removal of the causes of disease.

Sec. 11.—Authorizes these local Boards to purchase sanitary works for the benefit of their respective towns and cities.

Sec. 12.—Requires the local Boards to appoint a Secretary, and authorizes them to appoint a Medical Health Officer and a Surveyor, and to fix the compensation for these persons.

Sec. 13.—Requires the Medical Health Officer to ascertain the existence of diseases of various kinds, to compare their prevalence and results in various seasons and in different years, and in the different districts and classes of society; to ascertain any atmospheric, local, or personal causes of the temporary increase or decrease of disease and mortality; to point out nuisances, or other causes of disease; to suggest remedies for sanitary evils, and in all other ways execute the sanitary orders of the local Board.

Sec. 15.—Requires the Surveyor to prepare a map of the town, or of any of its parts, showing the location, level, and grades of the roads and streets, mill-ponds, watercourses, and seats of nuisance, and to prepare plans of drainage and sewerage.

* Report, page 307 to 321.

Sec. 16.—Authorizes the local Boards to make regulations, for ascertaining The causes of all the deaths in the town.

The prevailing diseases in the towns, and their causes.

The amount of sickness in different classes of people.

For preventing or mitigating diseases.

For affording medical relief to persons diseased or threatened with disease.

For abating nuisances.

For restraining persons or articles affected with the small-pox contagion.

For establishing hospitals for contagious diseases.

For constructing sinks, ash pits, privies, cesspools, drains, and sewers, and for the removal of every sort of offal.

For cleansing grounds, buildings, and vessels.

For regulating the location of chemical works, slaughter-houses, and every kind of building or process that may be offensive or injurious.

For regulating the sanitary condition of houses and shops that may be crowded, and the heat and ventilation of school houses, and other public buildings.

For regulating the sale of unwholesome food and drink, intoxicating liquors, adulterated medicines, &c.

For the superintending of burial-grounds and interments.

For the registration of births, marriages, and deaths;

And for executing all other sanitary orders of the General Board of Health.

Sec. 17.—Authorizes the local Board in any sea port to establish quarantine.

Sec. 18.—Requires that the head of any family in which a case of small-pox exists to give notice of it to the Board of Health.

Sec. 21.—Requires sheriffs, marshals, and constables to execute the orders of the Boards of Health in removing nuisances and persons affected with contagious diseases, breaking open houses or other places where these may be, and impressing, for the use of the sick, houses, nurses, attendants, and other things needful for this purpose.

Secs. 22, 23, 24.—Provide for the payment of all these operations, and all expenses of the Board of Health by the town or city.

Sec. 25.—Requires the general Board to take measures to prevent the spread of contagion.

Sec. 26.—Imposes penalties on the resistance to, or infraction of, the rules and orders of the Board of Health.

Sec. 27.—Requires the local Boards to report annually to the general Board the sanitary history and condition of their towns and cities, and to recommend such measures as seem to them improvements.

Sec. 28.—Imposes a penalty on any town which shall neglect to appoint a Board of Health, and upon the Board if they neglect to report to the general Board.

Secs. 30, 31, 32.—Require the owner of any property to remove any nuisance or filth from it, at his own expense, on notification for this purpose from the Board of Health, and if he neglect to do so, he shall be fined for each day's negligence, and the Board shall remove it at his cost.

Sec. 35.—“Any person injured, either in his comfort, or in the enjoyment of his estate, by any nuisance, may have an action on the case,” and recover damages of the person by whose action or negligence the nuisance is produced or continued.

This is the substance of the law proposed by the sanitary commission.—There are many details and incidental and collateral minutiae and explana-

tory matters, necessarily omitted here, which give the system a completeness in its plan and effectiveness in its operation.

This law is now proposed to the government of Massachusetts for their adoption. After the attention and encouragement of three successive legislatures; after the careful consideration of two committees, and one commission appointed expressly for this purpose; after the active urgency of the friends of this measure, who, as naturalists, as philanthropists, and as political economists, have pressed it upon the people and the law-givers through several years; after all this interest and labour in the production of the plan, it is confidently hoped that this, the fourth legislature that has had the matter under consideration, will adopt the propositions of the commission, and provide by public law for the security of human life and health, as effectively as they do for the security of property.

The commission recommend a series of fifty measures, which constitute their plan of sanitary reform. These fifty recommendations are stated in the form of specific propositions, and are supported by many facts and arguments, which run through one hundred and thirty-two pages of the report.* Many of these measures are already indicated in the law which we have already analyzed. Others are subsidiary, and need further explanation.

In the construction of the general Board of Health, the commission recommend† that it should contain:—

1. "Two physicians, at least, of scientific attainments, and of extensive practical experience in their profession, thoroughly understanding sanitary science, and deeply feeling the importance of wise sanitary measures."

2. "One counsellor at law, who, besides the general knowledge of law and medical jurisprudence, might especially be able to investigate any legal question that might arise."

3. "One chemist or natural philosopher. Many questions relating to the influence of the elements on the production or prevention of disease may require the special investigation of an experienced chemical philosopher."

4. "One civil engineer, possessing competent knowledge to determine the best methods of planning and constructing public works, and the best architectural sanitary arrangements of public buildings, workshops, and private dwellings."

5. "Two other persons of acknowledged intelligence, good judgment, and practical experience in the common affairs of life."

6. "All should make themselves thorough masters of the objects of their appointment, should have sagacity and foresight to perceive the bearing and effect of every measure proposed, be eminently practical men, wise in deliberation, and judicious in decision."

The Secretary is to be the active and efficient officer of the Board. "He should be thoroughly educated in the science of public health, and the causes and prevention of disease; and be capable of arranging, analyzing, and combining the facts that may be collected, and of making such deductions from them as will be most useful to science." For this purpose, he must be a man of high order of intellect and education. He must devote his whole time to the work; and for this he should receive a competent reward.

The local Boards, like the general Board of Health, are to be somewhat permanent. They are to consist of three, five, or seven persons, each of whom is to hold his office as many years as there are members, one being appointed in each year. Besides these, the principal officer and the clerk or registrar of the town or city are to be *ex officio* members of the Board.

These local Boards are to make a report annually to the town of the sani-

* Pages 109 to 241.

† Report, page 113.

tary condition of the town or city during the preceding year, and to send a copy of their report to the Secretary of the general Board.

The fifteenth recommendation proposes "that provision be made for obtaining observations of the atmospheric phenomena, on a systematic and uniform plan, at different stations" in various parts of the State.

The precise influence of the atmosphere in its various conditions upon health and disease is not yet determined. That this influence is very great in the production of colds, influenza, and other epidemic and sporadic diseases, is hardly doubted by any: but how far this extends is yet to be ascertained by many and varied observations of the atmospheric phenomena, and of co-existing disease; both of which must be systematized and compared, in order that valuable deductions may be drawn from them, and the true connection between these classes of facts determined.

The reports of the Registrar General of England for several years contained the meteorological observations which were made at the Royal Observatory at Greenwich, in connection with the returns of deaths and diseases. Similar combinations of meteorology with mortality have been published by M. Quételet, at Brussels, in Belgium. The legislature of Massachusetts has already ordained the establishment of several stations in various parts of the State, not exceeding twelve in number, "where shall be deposited the instruments necessary for making systematic observations in meteorology, according to the plan recommended by the Smithsonian Institute, at an expense not exceeding one hundred dollars for each."* The results of these observations, when compared with the sanitary reports, and the bills of mortality, will throw much light on the connection of the atmospheric condition and influence with health and disease.

We would call public attention especially to the sixteenth recommendation in this report: "That, as far as practicable there be used, in all sanitary investigations and regulations, a uniform nomenclature for the causes of death and for the causes of disease."

A uniform nomenclature of diseases and their causes is as important in all descriptions and reports respecting sickness and mortality as a uniform grade of instruments is in meteorological reports, or as a uniform standard of weights and measures is in all commercial regulations.

It is difficult to conceive of so great uncertainty, variety, and inaccuracy in the application of terms in any other science as in the reports of mortality and its causes, and in the popular notions and conversation upon these subjects. Various names are used to designate the same facts and conditions, and the same term is applied at different times and in different places to describe different diseases. There is, among physicians, some inaccuracy of diagnosis and more inaccuracy of language, and among the people both of these prevail to a great extent.

The Registrar-General of England, in his seventh Report,† publishes a list of all the various names and terms, intended to describe diseases and the causes of death, that came to his office in the reports of the local registrars throughout the kingdom. They amount to 1177. These, however, are reduced to 95 in the nosological arrangements of these reports.

Perhaps, if we could collect the terms which are used in conversation, or in writing, by the friends of the deceased, or by the physicians, or by others who should report, to designate the causes of death throughout the United States, we should find as great a variety of terms as is found in England.

* Acts and Resolves of March, 1850, chapter 1. p. 104.

† Pages 293 to 314.

We have now before us the registration reports and bills of mortality of two States and of several cities. The following are the numbers of terms used in these to designate the causes of death:—

	Year.	Number of causes of death.		Year.	Number of causes of death.
Massachusetts	1843	106	New York City	1844	96
“	1847	97	“	1849	118
New York State	1847	153	Boston	1837	97
“	1848	175	“	1849	89
Charleston, S. C.	1828 to 1845	236	Baltimore	1845	85
Philadelphia	1840	208	“	1849	95
“	1846	222	Providence	1849	74
New Orleans	1849	197	Lowell	1849	59
Washington	1849	148			

It is not necessary here to show the precise difference between the nosological nomenclatures of these different States and cities. These facts are sufficient to show that they are very unlike. It is not to be supposed that the distinct diseases or causes of death in Charleston, S. C., are to those of Lowell, Mass., as 236 is to 59, or that those of Philadelphia are to those of Boston in the ratio of 222 to 97, as is apparent from the bills of mortality of these cities. But, making all due allowance for the difference of climate and endemic influence, and for some rare diseases which may occur in some places, and in some years and not in others, and also for variety of accidents which are reported as distinct causes, the difference in these numbers is probably to be charged mainly to the difference of minute diagnosis of disease, or to difference of language in those who make the reports of deaths, or in those who make and publish the record. Some reporters, being unacquainted with scientific nosology, give popular names of the diseases or causes of death, which may be many and various as applied to the same disorder or lesion; or different reporters may give the same name to various diseases. Some registrars record these as they are reported—others condense them, and, instead of the varying popular names, give the single scientific synonyme.

But, whatever may be the cause of these differences of nomenclature in the bills of mortality, it is manifest that the language used in Charleston and Philadelphia to designate diseases or causes of death is not like that used in Boston, Lowell, and Providence, to describe similar facts. It is, therefore, very difficult, if not impossible, to combine the reports of deaths and their causes in these various places, and arrange their facts in one system, in order to afford the broadest ground of reasoning and inference, in respect to life and mortality.

The sanitary commission had this difficulty in view, and in order to meet it, they proposed the adoption of one uniform nomenclature or system of naming diseases, by all the reporters and registrars in this State. The commission spoke for Massachusetts alone; but it is to be hoped that their suggestion will go farther, and that their nomenclature will be adopted by all the medical writers and registrars in all other States of the Union.

The Massachusetts Medical Society, at the request of the commissioners, directed their committee to prepare a nosological system, to be used by the registrars of the State. The system which they prepared, and which is adopted by the commission, and published and recommended in their report, is mainly that which was prepared by Mr. William Farr, of London, for the Registrar-General of England, and is used in all the English Registration

Reports. There are some few alterations, to suit the difference of diseases in England and America. It is similar to the nomenclature of diseases prepared by a committee of the American Medical Association, and printed in their Transactions for 1847.

This arrangement divides the diseases into twelve classes:—

- I. Zymotic, or endemic, epidemic and contagious diseases.
- II. Diseases of uncertain or variable seat.
- III. " Brain and nervous system.
- IV. " Organs of circulation.
- V. " Respiratory organs.
- VI. " Digestive organs.
- VII. " Urinary organs.
- VIII. " Generative organs.
- IX. " Locomotive organs.
- X. " Skin.
- XI. Old age.
- XII. External causes.

These classes are subdivided into one hundred and eight diseases, which we here quote entire from the report* of the commission.

I. Zymotic diseases.

- | | |
|-----------------------|-----------------------------------|
| 1 Cholera, | 33 Chorea, |
| 2 Cholera Infantum, | 34 Convulsions, |
| 3 Croup, | 35 Delirium tremens, |
| 4 Diarrhoea, | 36 Epilepsy, |
| 5 Dysentery, | 37 Hydrocephalus, |
| 6 Erysipelas, | 38 Insanity, |
| 7 Fever, Intermittent | 39 Paralysis, |
| 8 Fever, Remittent | 40 Tetanus, |
| 9 Fever, Typhus | 41 Organs, disease of |
| 10 Hooping Cough, | |
| 11 Influenza, | IV. <i>Organs of circulation.</i> |
| 12 Measles, | 42 Aneurism, |
| 13 Scarlatina, | 43 Pericarditis, |
| 14 Small-pox, | 44 Organs, disease of |
| 15 Syphilis, | |
| 16 Thrush. | V. <i>Respiratory organs.</i> |

II. Diseases of uncertain or variable seat.

- | | |
|-----------------------|-----------------------|
| 17 Abscess, | 45 Asthma, |
| 18 Atrophy, | 46 Bronchitis, |
| 19 Cancer, | 47 Consumption, |
| 20 Debility, | 48 Hydrothorax, |
| 21 Dropsy, | 49 Laryngitis, |
| 22 Gout, | 50 Pleurisy, |
| 23 Hemorrhage, | 51 Pneumonia, |
| 24 Infantile disease, | 52 Organs, disease of |

- 25 Inflammation,
- 26 Malformation,
- 27 Mortification,
- 28 Scrofula,
- 29 Sudden,
- 30 Tumour.

III. Brain and nervous system.

- 31 Apoplexy,
- 32 Cephalitis,

VI. Digestive organs.

- 53 Ascites,
- 54 Bowels, disease of
- 55 Colic,
- 56 Dyspepsia,
- 57 Enteritis,
- 58 Gastritis,
- 59 Hernia,
- 60 Intussusception,
- 61 Peritonitis,
- 62 Quinsy,
- 63 Stomach, disease of

- 64 Teething,
- 65 Ulceration,
- 66 Worms,
- 67 Hepatitis,
- 68 Jaundice,
- 69 Liver, disease of
- 70 Pancreas, disease of
- 71 Spleen, disease of

VII. *Urinary organs.*

- 72 Cystitis,
- 73 Diabetes,
- 74 Gravel,
- 75 Kidney, disease of
- 76 Nephritis,
- 77 Organs, disease of

VIII. *Generative organs.*

- 78 Childbirth,
- 79 Paramenia,
- 80 Puerperal fever,
- 81 Organs, disease of

IX. *Locomotive organs.*

- 82 Rheumatism,
- 83 Joints, &c., disease of
- 84 Hip, disease of
- 85 Spine, disease of

X. *Skin.*

- 86 Fistula,
- 87 Purpura,
- 88 Ulcer,
- 89 Skin, disease of

XI. *Old age.*

- 90 Old age.

XII. *External causes.*

- 91 Accident,
- 92 Burns and scalds,
- 93 Drowning,
- 94 Execution,
- 95 Freezing,
- 96 Glanders,
- 97 Heat,
- 98 Hydrophobia,
- 99 Intemperance,
- 100 Lightning,
- 101 Malpractice,
- 102 Murder,
- 103 Necusis,
- 104 Poison,
- 105 Starvation,
- 106 Suffocation,
- 107 Suicide,
- 108 Wounds,
- 109 *Unknown*,
- 110 *Still-born*.

Mr. Farr's system, used in the English Reports, includes *hydrophobia* in the first instead of the twelfth class, and omits *remittent fever*. It puts *quinsy* among the diseases of the respiratory instead of the digestive organs. It includes *ischuria* and *stricture* among the diseases of the urinary organs, *ovarian dropsy* among the diseases of the generative organs, *carbuncle* and *phlegmon* among the diseases of the skin, and *cold* and *privation* and *violent deaths* among the external causes, which are omitted in this system of the sanitary commission. It omits also *puerperal fever* among the diseases of the generative organs, *fistula* and *purpura* among diseases of the skin, and the whole of the class of external causes excepting *intemperance*, which are included in the American system.

The seventeenth recommendation advises that,

"In laying out new towns and villages, and in extending those already laid out, ample provisions be made for a supply in purity and abundance of light, air, and water; for drainage and sewerage, for paving and cleanliness."

We have already called the attention of the readers of this Journal* to the importance of this matter. And we cannot omit this opportunity to urge it again upon the people of this country. Our population is fast gathering into dense masses; new villages are created, villages are growing into towns, and towns into cities, and old cities are expanding their borders and condensing their interior districts. The ratio of increase of population within the last thirty years has been greater, and in some places very much greater, in the cities and dense towns than in the country parts of the States to which they belong.

* Vol. xv., p. 419, April, 1848.

In this development of new towns and cities, and in this extension of the old cities over their rural neighbourhoods, the manner of the growth and change is mostly left to private interest and to chance. The general plans, if they exist at all, are arranged and the streets are laid out as the present temporary convenience may suggest, or as the interests of the land proprietors may require. The questions of the facility of present travel or of conducting business, the cost to the public of building the road and the sale of the lots, are first considered in preparing or extending the sites of towns. Very few of them, in their incipient and amorphous stages, have their destinies shaped by that far-reaching economy that looks upon vacant lands as the seat of a future city, and arranges the plans, lays out the streets, and determines their direction, width, and grades, in reference to the sanitary wants of a dense population that shall ultimately cover them.

When the streets are first run through the open fields, a passage way for travel only seems to be needed; and even when the houses are first built, they are not high, and the land being comparatively cheap, the buildings are set back with yards between them and the highway. Thus far the public wants are satisfied, for they need and demand no more space for their use. But when the pressure of population and business, and the increased value of land, line these highways with high and continuous houses and shops close by their borders, then the streets are found to be narrow and dark, and the want of more room for light and ventilation is felt.

As population becomes more dense and land more valuable, the owners of vacant lots and gardens find it for their interest to run courts into them, and line these with houses. These courts are closed at one end, and sometimes at both, except by an arched passage leading under the buildings at one end into the open street. Sometimes one court leads from another. These places are generally very narrow, and the houses that border upon them are often high. Thus the ventilation in great measure is excluded, or reduced down to the lowest point that art and cupidity can bring it. And light is provided in the same sparing way. Consequently, two of the great essentials of life and enjoyment, light and air, which are offered by a beneficent Providence with unlimited bounty, are supplied to the dwellers of these narrow and almost closed courts with the most grudging parsimony.

The lands into which an old city expands, or over which a new city is created, are usually in the hands of many proprietors, who have no other interest than to convert their lots into money. All that is not thus converted is lost to them. No one of them feels it to be his duty, or is induced by his views of his own interest, to provide for the wants of future generations of dense population, by leaving unoccupied any open fields for common and public use. Consequently, our American cities are growing up and expanding, without commons and public grounds, places of promenade for men and women, and play for children and youth, apart from the common thoroughfares; or, if they are provided, it is with few exceptions done so meagrely as to fall very far short of the wants of the inhabitants of a compact city.

If this recommendation of the commission should be universally adopted, and the projectors of new cities, or those who expand any old city or town, were required to lay their plans; arrange their streets as to direction, width, and grade, and to leave open grounds for public use, solely in reference to the life and energies of the dense population of the future city, health, comfort, and productive power would be increased, the earnings would be augmented, the expenses of sickness and the cost of conducting business would be diminished, and wealth multiplied through coming generations beyond the present calculations of the projectors.

The commission recommend that all public buildings, churches, school-houses, court-houses, theatres, and halls for public assemblies of whatever nature, be planned and built with express reference to the health of the occupants, and this be considered especially in regard to the situation, warming, and ventilation.

They advise that all persons, whenever they erect any building, whether for dwelling or for the purposes of business, give notice to the local Board of Health of the sanitary arrangements. They advise that this local board very carefully notice the sanitary condition and circumstances of people dwelling or working in the vicinity of ponds, and especially of such as are alternately flowed and drawn off for mills.

The thirty-third recommendation advises "that the general management of cemeteries, and other places of burial and of the interment of the dead, be regulated by the local boards of health."

We have already spoken of this subject at considerable length,* and we are now glad to see the opinions which we then gave, sustained by public authority, and urged upon the government for their adoption, and upon the people for their action.

Proper respect for the dead, and the tenderest regard for the agonized sensibilities of their relatives, are perfectly consistent with a due regard to the health of the living. On the contrary, the manner of burial which is common in many cities and towns is disrespectful to the deceased, revolting to the feelings of mourning friends, and injurious to public health.

All our notions of comfort in sickness, all our satisfactory associations with death, are connected with retirement and peace. The true respect for the dead, and regard for the feelings of surviving friends, require that the resting-places of the deceased should be in the fields of quiet and seclusion, apart from the scenes of labour and business, the haunts of indifference and revelry, and the tumult of business. They should rest where none come but to contemplate, where the mourner can retire to commune with the departed, undisturbed by the noise of busy life.

The old cemeteries are in the midst of dense streets and the crowded population of many cities and towns. The graves, which are sometimes pits, are dug as near to each other as possible, and the corpses are piled one upon another, from the depth of many feet in some places to within a few inches of the surface. Thus, these burial-grounds are filled and filling to their utmost capacity with the bodies of the dead, which form almost one mass of decomposing and corrupting flesh. During this process of decay, they send forth their gases and fluids to affect the neighbouring springs and waters that percolate through the earth, and to rise above the ground and vitiate the atmosphere.

The health of the living must necessarily suffer, to a greater or less extent, from drinking the waters which are thus affected, by breathing the air which is thus tainted, or by the absorption through the cutaneous surface of any of the exhalations from the decomposing bodies of the dead.

The establishment of rural cemeteries in the vicinity of cities and out of the villages meets and obviates these objections. The effluvia which they send forth cannot reach the dwellings to corrupt the air, nor the gases reach the springs to vitiate the drink of the living and to impair their health. They leave the dead in their long homes in quiet and peace, undisturbed by the cupidity that removes them in order to sell or let their graves to new

* Journal, No. 17, p. 131, Jan. 1845.

occupants, and there the mourners can retire and be alone with the departed friends.

The twenty-sixth recommendation advises "that measures be taken for preventing or mitigating the sanitary evils arising from foreign immigration."

The commission, after informing us of the number of immigrants that arrived in Boston, "125,000 within the last four years," shows that many of these foreigners bring their poverty and their low health from their native lands. In 1834, the poor law commissioners of England recommended that the parish officers be authorized to pay the cost of the transportation of any of their paupers to a foreign country.

"Some poorhouses have been emptied, and their inmates transported to America. The stream of emigration has increased, and seems to gain a new accession of strength in every passing year. Massachusetts seems to have resolved itself into a vast public charitable institution. Into her institutions are admitted the emigrant pregnant woman at her lying-in, the child to be nursed, the pauper to be supported, the criminal to be punished and reformed, the insane to be restrained and cared for, the sick to be nursed and cured, the dead to be buried, the widow to be comforted, the orphan to be provided with a substitute for parental care; and here ten thousand offices of social and personal kindness and charity, not recognized by the laws of the State, costing thousands upon thousands of dollars, are bestowed."*

"Our own native inhabitants, who mingle with these recipients of their bounty, often become themselves contaminated with diseases, and sicken and die; and the physical and moral power of the living is depreciated, and the healthy, social, and moral character we once enjoyed is liable to be forever lost. Pauperism, crime, disease, and death stare us in the face."†

There is much reason for supposing that foreigners, and especially the natives of Ireland and their children, in this State, have a lower degree of health than the natives of this country of Anglo-Saxon origin. They furnish much more than their due proportion of the inmates of our hospitals, poorhouses, and prisons.

From all the facts that can now be obtained relative to the health and longevity of our foreign population, it is very probable that their vital force is lower than that of the natives. They, especially the Irish immigrants, seem to have less physical, intellectual, and moral power, and hence they are more frequently sick, they die at earlier periods, a larger proportion of their children die, they are less capable of supporting themselves, they are more frequently led to violate the laws; whether this is owing to native and inherent weakness, or to the influences of this climate, or the circumstances and conditions of a strange land and a strange society, is yet to be revealed.

The thirty-seventh recommendation of the commission is worthy of very careful consideration, and we commend it to the people in all parts of the country. They advise "that a sanitary association be formed in every town and city in the State, for the purpose of collecting and diffusing information relating to public and personal health."

Most of the sciences and arts, and the important interests of the people, have their associations to encourage and establish them. The friends of these find great advantage from these combinations to gather and diffuse knowledge. Agricultural societies have done much to elevate and advance that profession. By their mutual consultations, by their exhibitions, by their reports and their journals, they have brought to one focus the wisdom and the experience of every part, and again they have spread these before the whole. Thus, all the people have been induced to look to the higher, and many to the highest

* Report, page 205.

† Ibid.

standard, and have endeavoured to improve their own works thereby, and all have consequently made great advancement. Societies are everywhere formed to create an interest in and for the diffusion of the principles of other arts and the strengthening of other interests. By meetings and discussions, by publications and by example, they excite a love for, and gather and extend the knowledge of, the principles which they desire to cherish.

By the same means, an interest may be created in the laws of health; a knowledge of the elementary principles of life may be obtained and diffused, and the people led to understand what these are and how to apply them in their self-government, in all the chances, labours, and affairs of common life. They may be induced to inquire, whether human life cannot be improved as well as the life of the lower animals; whether the deficiencies of health and strength, the discomforts, pains, sickness, and early mortality may not be owing to causes which can be removed; and whether all the means and opportunities that are offered to man for the development and maintenance of his powers are used to their best advantage.

These sanitary associations are now common in England: and there they are doing great good in ferreting out sanitary evils and the causes of low health and sickness, and thus creating a public desire and will to remove or ameliorate them. Their addresses and their journals are full of interest upon these topics, and teach us, as well as themselves, valuable lessons in regard to the practical advantages of obeying the law of life.

The London Statistical Society has been very active in this matter, and has caused some important investigations as to the condition and health of the people and especially of the poorer classes. Their reports are printed in their journal, and are worthy the careful study of the people of America as well as of England.

We earnestly hope that, according to the suggestions of the commission, similar societies will be formed in this country. There should be, in every town and city, associations of men in pursuit of the best means of developing strength and maintaining health, jealously watchful of every nuisance and every injurious habit and custom, looking carefully after every defect and circumstance that may, in the least degree, interfere with public or private health, with the fullness of human power on earth.

The thirty-eighth, thirty-ninth, fortieth, and forty-first recommendations of the commission advise,

“That tenements for the better accommodation of the poor be erected in cities and villages.”

“That public bathing-houses and wash-houses be established in all cities and villages.”

“That whenever practicable the refuse and sewerage of cities and towns be collected and applied to the purposes of agriculture.”

“That measures be taken to prevent, as far as practicable, the smoke nuisance.”

These are worthy of commendation; we have already spoken of them;* and now we pass to the forty-fourth recommendation, which advises “that institutions be formed to educate and qualify females to be nurses of the sick.”

Here comes a tender point; we want a corps of well-educated nurses, and yet we hesitate: thinking “a little learning is a dangerous thing” in medicine, we fear that females trained to the professional care of the sick may wish also to prescribe and thereby interfere with our plans, or assume responsibilities which should rest only on those who are completely educated in the

principles of the healing art. Yet, if they are properly educated, there is no ground for this fear; certainly, if our nurses were systematically trained to their employment, we should rest with more confidence that our prescriptions would be faithfully administered. Few physicians have been long in practice without having occasion to feel how much they and their patients are in the hands of the attendants, who are often ignorant and sometimes officious and meddlesome, and how often their carefully studied plans of treatment are rendered feeble and ineffective for want of discreet and faithful co-operation in those who stood and watched permanently by the bedside.

For other employments, men and women serve an apprenticeship: they devote some months or more to learn the art of dress-making, spinning, straw-braiding, &c.; but ordinarily, no such preparation is required for the care of the sick. Any one whose heart is warm with benevolence, or who has no other occupation, or even who has failed in other pursuits, may set up for a nurse and obtain employment.

If our hospitals would admit women to learn the art of nursing the sick, and, after a proper apprenticeship, send them forth, with certificates of proper qualification, to be employed in the sick chambers of private life, they would do a great good, and aid to supply a want that is now very generally felt, and in some cases very severely.

The forty-fifth recommendation advises "that persons be specially educated in sanitary science, to be preventive as well as curative advisers."

This strikes at the root of the whole matter, and, if adopted and carried out, will have an important influence on the sanitary condition of the people, on the studies of our profession, and on their relation to those who employ them. "They that are whole need not a physician, but they that are sick." This doctrine has been believed by the world, and made the law of all time, from the beginning. The world does not believe it wants, and no class of men prepare themselves to give, preventive advice. There is no demand, and consequently no supply. The sole vocation of the physician is looked upon as curative, as remedial of an evil when it has come, but not as defensive against it. Men are generally willing to seek and to pay for the skill that redeems them from disease and pain, but they have no idea of looking for, or paying a man of science for warning them of, and defending them against, this evil. A prudent man consults his lawyer as to the proper course to be pursued in order to avoid the entanglements of the law, and the risk or loss of property, and pays him liberally for this cautionary advice. But, in regard to sanitary measures, the location of a house, the ventilation of a dwelling, the selection of occupation, diet, habits, or any other thing that may immediately or remotely affect the health or strength of himself, his family, or his neighbourhood, if he consults his physician at all, which, however, is not frequently done, he expects his adviser to give his opinion on the friendly or neighbourly account, and not as a matter of commercial value. And even then this advice is not held in the same estimation, nor considered as worthy of confidence and obedience, as the opinions of the same adviser when consulted in regard to any disease.

As the world is glad to obtain and pay for the wisdom that can remove a fever, but is unwilling to pay for that which keeps the fever away, the natural consequence is, that men, when they prepare themselves to be physicians, seek for that knowledge which will be demanded and bought by those who will employ them. Allowing to the medical profession all due credit for philanthropy, which we claim for them in no small measure, yet a great object of the physician, like that of other men, is to obtain his support by his

calling. He, therefore, instructs himself with that kind of knowledge which the people will purchase. Looking at the market, he gathers for other men's use that commodity which they are willing to seek and pay for, and which is thus convertible into bread for himself and his family. He therefore becomes a curative and not a preventive physician. And until mankind looks differently upon health and disease, and considers that the former is very much in their own hands, and that the latter may be prevented, in a great measure, by proper self-management, and will set a just value on the skill that shall guide them safely from the attacks of disease, it is altogether vain to expect that ours or any other profession will devote the time and labour necessary to be accomplished and successful preventive advisers in sanitary matters.

The forty-sixth recommendation advises "that physicians keep records of cases professionally attended."

We yet need more tangible and definite grounds to determine the events of disease. We have general and conjectural opinions on this point, but we have no accurate data for comparing the mortality of different diseases, or of the same disease in different seasons, or periods, or in different places or classes of society. Some of the British vital statisticians have endeavoured to ascertain, from a few records, the proportion of deaths to the amount of sickness or to the number of attacks of all kinds of disease. But their inferences have no regard to special diseases, and throw no light upon their comparative curability or fatality.

The Massachusetts Medical Society took this matter into consideration in 1843. It was referred to a committee, who made their report the next year. They advised that a universal system of registration of disease be adopted by the members of the Society; that the records of all these physicians be annually gathered; and that the committee of the Society digest all these returns into one system, and print the results in a tabular form, with such suggestions or annotations as may be supplied to them, and distribute the volume, when printed, to the Fellows of the Society. The Society accepted and printed the report, and distributed it to all its members; but no further action was taken upon it; and this plan thus slept the sleep of death. Again it is proposed by this commission, and, we trust, with better results.

We have thus given, at considerable length, the substance of this able and valuable report. After all that has been done by the people and the governments of some countries of Europe, and after all that has been done by individuals and societies in America, this report is the first approach to legislation from any government in this country.

This plan of Mr. Shattuck is an extensive one. It comprehends more than the friends of the measure originally proposed for immediate adoption, and more, we fear, than any of our legislative bodies will see their way clear to adopt at once. The original friends of this measure only asked for a sanitary survey; but they had no doubt that, when this should be undertaken and accomplished, the people would see the advantage of further action, and call upon their legislators to provide successively for all the sanitary measures which are proposed in this report.

As it is, we commend this report, with all its plans and details, its facts and arguments, to the careful consideration of physicians and philanthropists, of political economists and legislators, with the confident belief that the condition of man will be improved, and the interests of humanity advanced, as well as public and private wealth increased, by its adoption.

E. J.

ART. XIV.—*Musée d'Anatomie de la Faculté de Médecine de Strasbourg — Histoire des Polypes du Larynx.* Par C. H. EHLMANN, Professeur à la Faculté de Médecine de Strasbourg, &c. &c. &c. Fol., avec six planches lithographiées : pp. 58. Strasbourg, 1850.

Anatomical Museum of the Faculty of Medicine of Strasbourg—History of Polypus of the Larynx. By C. H. EHLMANN, Professor to the Faculty of Medicine of Strasbourg, &c. &c. &c. Fol., with six lithographic plates: pp. 58. Strasbourg, 1850.

THE author of the book whose title we have copied above was induced to present to the profession this result of his studies in the matter of polypus of the larynx, partly because of the importance of the subject, and partly because his own experience in the treatment of the affection enables him to place it before his brethren in a more favourable light than they have before seen it. In the year 1844, he was called to attend upon a case of polypus of the larynx, in which death was imminent; he opened the trachea and larynx, removed the offending growth, and saved the patient's life. This case was reported to the Academy of Sciences, of Paris, and was pronounced by that learned body to be the first instance in which this operation had been successfully performed in this disease; and Stromeyer, President of the Scientific Congress which assembled at Aix la Chapelle, in 1847, declared that it was one of the most brilliant conquests of modern surgery.

In this essay, M. Ehrmann has collected the reports of all the well-authenticated cases of this affection which he has found recorded, and lays them before the reader, accompanied by drawings illustrative of many of them.

No tabular statement of the phenomena attending the disease in these cases is presented; indeed, the character of the reports hardly admits of a satisfactory exposition of this kind. We will endeavour, however, to analyze the details as well as we may, inasmuch as we think that any reliable information concerning this interesting and obscure affection must be worthy of attention.

The number of cases which M. Ehrmann reports amounts in all to thirty-six. These are collected from various sources: two are from Lieutaud; three from Desault; one from Pelletan; two from Schultze; one from Otto; two from Andral; one from Senn; one from Urner; one from Dupuytren; one from Brauers; one from Rayer; one from Dawosky; one from Trousseau and Belloc; one from Gérardin; one from Mayo; one from Ryland; one from Rendtorff; three from Gluge; one from Nasse; one from Stallard; one from Bertherand; one from Rue; and two which he observed himself: the remaining five occurred in animals, two of them in horses, and three in cows. These cases are reported briefly, but satisfactorily as regards the main points, in most of them.

The prominent symptoms in these instances were, sense of the presence of a foreign body in the larynx, producing cough, alteration in the voice, dyspnoea in paroxysms, and finally complete prevention of the entrance of air, and death. But these symptoms varied considerably in intensity and in their progress.

The mode of invasion differed. In one case (obs. 19) the first symptom was sudden and inexplicable loss of voice, to which was added, at the end of eighteen months, cough, with dyspnoea; death at the expiration of two years. In others, and most commonly, the affection manifested its existence by the occurrence of slight dyspnoea, or trifling change in the sound of the voice, at a period remote from the termination, in one individual two years before death (obs. 31), in another six years (obs. 29). On the other hand, the progress of the affection may be more rapid, as in the instance described in obs. 7; a

boy, six years old, presented symptoms of croup, in the latter part of February; the attack did not pursue its usually rapid course, but became gradually chronic, the child having more or less fever all the time, and his voice being always muffled; towards the beginning of May, he recovered in a measure his strength and flesh, but on the 12th July, about twenty weeks after the first seizure, he was suddenly attacked with suffocative dyspnœa, and died in the paroxysm. At the *autopsy*, a polypus was found seated near the base of the epiglottis cartilage, and closing the chink of the glottis. And in obs. 17 is recorded the history of another boy, ten years old, in whom the cause of formation of the polypus which destroyed his life is ascribed to the prior occurrence of repeated attacks of croup, under which the child suffered from trifling exciting causes. In such instances as these, in which the disease is of an *acute* character, the symptoms may abate from time to time, or they may continually increase in intensity, consisting of a croupy cough, constant or interrupted dyspnœa, with occasional or frequent paroxysms of suffocative orthopnœa, in one of which the sufferer usually dies; or death may be produced by a more gradually induced suffocation. In the more *chronic* cases, the symptoms may be thus enumerated: *feebleness, hoarseness, or other alteration in the tone and character of the voice*, gradually increasing, and amounting at last to aphonia, either persistent or interrupted; *dyspnœa*, varying in degree, but generally steadily augmenting, and in almost every case attended with paroxysmal aggravations, which may be so protracted in their duration as to simulate death (obs. 13), or, as in most of the observations, as actually to prevent restoration; sometimes this dyspnœa is produced during the act of *expiration*, and apparently by it, and is relieved by the *inspiratory* effort (obs. 3, 4, 5 and 8), but the reverse may be the case, or the difficulty of breathing may be equally great in both (obs. 13 and 18); *cough* is always present, but its characters are not particularly significant, being croupy, or simply hoarse, continuous, or in paroxysms, dry or attended with expectoration, appearing at the commencement of the difficulty, or at a later period; *the expectoration* is generally not characteristic of this affection, being usually formed of simple mucus, more rarely of mucus streaked with blood (obs. 8 and 9); the *respiratory sounds* were such as to indicate, generally, the existence of an impediment of some sort to the free passage of the air to and from the lungs; but they were not always the same in different cases; sometimes they resembled the noise of snoring, but more frequently they were merely harsh or stridulous; these sounds may be rendered more audible by the aid of the stethoscope. In several of the observations, there was experienced a *sensation of a foreign body in the larynx*, or of some stiffness and uneasiness in the acts of breathing and swallowing (obs. 8, 9, 12, &c.), but in other cases no such sensation was complained of by the patient, or it was omitted in the reports; rarely was there any tenderness or pain in the larynx.

We have said that, in the cases recorded by M. Ehrmann, the expectoration was not, in general, significant of polypus of the larynx; but in two of them it was so. The eighth observation illustrates this point in a very interesting manner; it is as follows: "A man of sixty-five years of age, but otherwise hearty, had been for several years past troubled with *hoarseness of voice*, which he attributed to a cold, and which gradually rendered him almost aphonic. He coughed but seldom, had no pain in the larynx, but experienced a disagreeable sensation, as of a substance which closed the larynx whenever he swallowed solid food, and when he expectorated mucus. Fearful of being affected with *phthisis laryngea*, he at length consulted a physician. The latter having exhibited to him the most appropriate remedies, both internal and external, the patient expectorated, a few days afterwards, in a paroxysm of

coughing, a *small globular, fleshy, red and solid mass*, of the size of a currant, and two days later a *similar body*, about as large as a small cherry: immediately afterwards, his voice and the facility of breathing were restored. At the expiration of some weeks, the patient expectorated, for the third time, a *fleshy mass* as large as a pea, and furnished with a very *delicate pedicle*. But the roughness of the voice and the dyspnoea soon returned: the latter symptom became so much aggravated that the abdominal muscles grew very painful, in consequence of their powerful contractions in respiration. Sometimes a slight cough occasioned the expulsion of a very viscid matter, tenacious, and at times mixed with blood. The patient's powers gradually sank, and he died of slow suffocation.

Autopsy.—The larynx was almost completely ossified, and the epiglottis cartilage was loaded with an abundance of fat. A *fleshy and nodulated tumour* of large size was found, as it might be, suspended in the glottis, springing by quite slender pedicles, surrounded by fibrous appendages, from the inferior vocal ligament on each side: it was consequently movable, and was formed by the union of three excrescences, each of which was as large as a hazelnut: they were roundish, rough, very firm, elastic, and of a pale red colour. One of them, situated above the glottis, was prevented by its volume from engaging itself in the chink; but the other two, placed below this opening, closed it so completely during the expiratory act, that suffocation must inevitably have followed. Apart from this, the vocal ligaments themselves, the ventricles of Morgagni, and the entire mucous membrane of the larynx were not at all abnormal in their appearance, excepting that here and there were a few red spots, and vessels of small calibre going to the polypi through the pedicles." There is a very good drawing of this larynx among the plates.

The twenty-ninth observation records a similar expulsion, at different times, during violent paroxysms of coughing, of small fragments of tissue similar to that of the tumour which was subsequently removed by the operation practiced upon the patient by M. Ehrmann, and which we shall have occasion to mention again directly. And even if the polypus, or portions of it, should not be actually expectorated, it is still interesting, though not available in a diagnostic point of view, to know that it may, by the violence of the cough, become detached from its connection with the mucous membrane and produce suffocation, as was the case in the twenty-eighth observation: "A woman, aged forty years, entered the hospital in a state of extreme exhaustion: she presented the symptoms of bronchitis, with severe cough and dyspnoea. During three or four days, she seemed to be getting better; but a *paroxysm of coughing* came on suddenly, and she died before any assistance could be offered to her. *Autopsy.*—The lungs were very emphysematous. The ramifications of the bronchial tubes were healthy, but the large trunks were very much congested. In the *trachea* was found a *polypous mass detached*; it was as large as an almond, and had a pedicle nearly three-fourths of an inch long. It was supposed at first that this body came from some point of the *larynx*, a part in which this kind of growth most frequently originates; but, on examining the *trachea*, we discovered upon its anterior wall, at the distance of half an inch below the cricoid cartilage, a reddened and thickened wound, below which the mucous membrane immediately regained its healthy appearance."

The expectoration of such matter as that which was thrown from the larynx in the cases mentioned above, viewed in connection with the alteration in the voice and in the character of the respiration, which has generally preceded such an occurrence, would be almost conclusive evidence as to the existence of polypus of the larynx. Other strong diagnostic testimony to the same effect may occur in the nature of the respiratory sounds, as in obs. 29, in

which the patient was able, by a quick movement of inspiration and expiration, to imitate the noise made by a *valve* opening and closing alternately; or in the assurance on the part of the patient that a foreign body seems to him to be forced by the respiratory acts against the chink of the glottis, and to be the cause of all his sufferings (obs. 15, 29, &c.); or finally, by the surgeon being enabled to feel with his finger introduced far into the patient's throat, a fleshy mass engaged in the rima glottidis, and perhaps projecting upwards from it (obs. 16).

The *size* of the tumours varied in different cases, from that of a pea to that of a pigeon's egg, or even larger. In some instances, they were pediculated, in others sessile upon a broad base.

The diseases upon which this local affection was engrafted, in the instances from which M. Ehrmann's observations were drawn, were, so far as is mentioned, *phthisis pulmonalis*, in four cases; *syphilis*, or what seemed most probably to be such, in three; *chronic disease of the urinary passages* in one; *scrofula* in one; in the remaining cases, the individuals were either healthy, or no mention is made of their general condition.

Their *ages* respectively were as follows: Between 1 and 5 years, one; 5 and 10, two; 10 and 20, three; 20 and 40, three; 40 and 60, nine; above 60, three; in the others, the age is not specified.

The *duration* of the complaint is given as twenty weeks in one case, some years in another, eighteen months in a third, several weeks in a fourth; one, two, and three years in as many others; but generally the time ascribed is rather indefinite, as "*a long time*," "*some time*," &c. Indeed, in some of the patients it would have been difficult to fix any reliable date for the commencement of this laryngeal affection, because they had for some time previously been the prey of disease of the respiratory organs, which are generally attended with cough, alteration of the voice, and the like symptoms.

As to the *causes* of the morbid condition of the larynx, we can glean but scanty information from the observations recorded, excepting with reference to a few cases. In a child, the subject of the seventh observation, which we have already quoted at length, we are inclined, from the narration of the symptoms, to consider *an attack of croup* as the starting-point and the exciting cause of the modified local nutrition which led to the formation of the polypus. And in the boy whose history is recorded in the seventeenth observation, which we have also adduced in connection with the other, the same cause may be assigned. In the latter case, the child had repeated attacks of croup; very trifling causes, "the slightest chilling, exposure to a current of air, excited invariably a very hoarse cough;" and how far this excessive and unusual sensitiveness of the mucous membrane may itself have depended upon some peculiarity of organization which occasioned both the cough and the development of the polypus, we cannot of course determine. We are told, however, that the patient was of "a delicate and scrofulous constitution," and we know that in such individuals the mucous membranes, particularly of the respiratory organs, perhaps, are very commonly thick, puffy, and very vascular, and, we may infer from such a constitution, prone to hypertrophy, requiring only the inciting action of such a cause as existed in this little individual to develop some local out-growth.

In like manner, we may certainly admit that it is possible that the polypi which grew upon the mucous membrane of the larynx in several others of the cases recorded by M. Ehrmann, may have taken their origin and outstart in a frequently repeated *catarrhal affection* of this membrane; in some of these patients, such a morbid condition is noted as having existed, and in

others their occupations exposed them constantly and inevitably to vicissitudes of the weather, which were well calculated to induce such a vascular turgescence of the laryngeal membrane. But why this particular result should have ensued in this limited number of cases, when thousands of others, possessing similar constitutions, and exposed to like disturbing influences, suffer from repeated attacks of croup and catarrh, and escape without the production of polypus of the larynx, we cannot fathom.

Several of the patients whose histories are recorded by the author, were laboring at the same time under *pulmonary phthisis*. We know that ulcerations of the lining membrane of the larynx, dependent in some measure, at least, upon the direct irritative action of the sputa, as they pass over this surface, are very commonly met with in phthisical subjects, and it certainly would not surprise us if some other modification of nutrition, as, for example, a *polypus*, should be the result of the same cause. But, on referring to the "*Researches*" of Louis, we find no mention of his having seen any such outgrowth in the numerous patients whom he observed, and in the subjects which he examined after death; and we are struck, moreover, with the fact that, in his examinations, the *posterior surface* of the larynx was much more frequently the seat of ulcerations than the anterior; while, on the contrary, in the observations of M. Ehrmann, the polypi were found upon the *anterior* surface of this organ in almost all the cases.

The *syphilitic dyscrasia* may be looked upon as another predisposing cause of the production of polypus of the larynx. M. Ehrmann reports several instances in which this constitutional taint co-existed with the local affection in question. But, in the greater proportion of the cases, there seems to have been no assignable cause for the local phenomenon, and we are left to "float, like Pyrrho, on a sea of speculations," with reference to them.

Pathological Anatomy—Histology.—Under this heading, M. Ehrmann offers some very interesting and instructive observations. He says, "the form and structure of polypous tumours are variable; they are sometimes roundish, sometimes irregularly shaped, united in clusters, granular, lobulated, most frequently pediculated; they occasionally resemble condylomata in appearance. Their attachments, whether broad or slender, single or multiple, are rarely traversed by blood-vessels of any size. They may occupy the whole internal surface of the larynx, but they are attached more commonly about the glottis, particularly to its inferior ligaments; they are more rarely found in the substance of the aryteno-epiglottic ligaments, and in the ventricles of Morgagni. The epiglottis is the favourite seat of those vegetations which are supposed to be syphilitic.

"Polypus of the larynx is constituted sometimes of fibrous or fibro-cellular tissue; and in other cases of all the elements of the mucous membrane united, but modified in character. When the tumour belongs to the first class, it assumes the form of a firm and compact mass, resembling that which exists in the proper fibrous tumours; in this respect, the tissue composing this species of polypus may be compared to that of the ligaments of the glottis, or to that which is found in their immediate vicinity; thus we see the pedicles of these tumours originating in the fibrous appendages, and blending with the fibrous element of the vocal cords, an observation which has been already made by Albers. The tissue composing these tumours is traversed by very minute blood-vessels, and their external investment consists of a thin layer of the mucous membrane modified in its structure." The polypus described in the twenty-second observation was of this nature, as is proved by the description which is given of it when examined by the aid of the microscope—(p. 32).

Of the other variety of polypus, that in which the tumour is composed

chiefly of the *mucous membrane*, the subject of the twenty-ninth observation affords a very good illustration. It was composed chiefly of the epithelium, which was perfectly recognizable by the form and arrangement of its cells. Of this kind of polypus the author thus speaks: "It is probable, then, as the result of these data, that hypertrophy of the mucous membrane involves especially its *epithelial layer*, since it is this which we find in superabundance in the mass which forms this variety of tumour; the *areolar* tissue which is met with in it belongs, as is well known, to the structure of all the mucous membranes; and if some fibrous tissue should occasionally be found at the base of these vegetations, it is as if for the purpose of forming a transition between the true mucous polypus and the fibrous."

M. Ehrmann coincides with the opinions held by Lebert, with reference to mucous polypi. The latter distinguished pathologist thinks that, instead of calling these growths "*polypi*," they should be considered as simple excrescences or *hypertrophies*, either of the epithelium, or of a circumscribed portion of the entire thickness of the mucous membrane, or of only a portion of the sub-mucous cellular tissue. This view of the subject simplifies it very much, and is, we have no doubt, consonant with facts.

The reader will find, by reference to the observations of the author, a great many minor points of interest, which we have not been able to notice in this sketch, because we did not think it expedient to extend our limits.

As to the treatment of polypus of the larynx, M. Ehrmann suggests no other method than that of removing it through an opening made along the middle line of the larynx and trachea, and we doubt very much if it be possible to relieve the patient in any other manner. In one of the cases reported (obs. 15), the surgeon, M. Brauers of Belgium, opened the patient's larynx, and endeavoured to destroy "the excrescences which filled the cavity of the organ," by the applications of the acid nitrate of mercury, and finally of the actual cautery: but, so far from removing them, they increased in volume after each cauterization, and although the patient was still living at the date of the report, his death was confidently expected. We presume that no other result can be anticipated from similar applications which might be made to the interior of the larynx, in such cases, after the method of Dr. Green.

M. Ehrmann reports *five* cases in which the operation was performed upon human patients, and *two* upon animals, a cow and a horse. Of the former series we have just cited one. The second instance was in a patient of Trousseau and Belloc (obs. 18); the man was forty-two years old, and had enjoyed good health, until about eighteen months before the operation was performed, during which time the polypus had been growing. The larynx was opened only when it was evident that the patient would otherwise die speedily of suffocation; some arterial and venous hemorrhage occurred when the incision was made, but this was arrested by slight compression. As soon as the canula was introduced into the opening, the patient's breathing was relieved, and he continued to do well during *the five following days*: but then an attack of gangrenous pleuro-pneumonia came on, of which he died in the course of twenty hours. At the autopsy, "all the left half of the mucous membrane was of a grayish-green colour; the inferior vocal cord was very much swollen, the superior less so; the left ventricle was bathed with an excessively fetid grayish sanies, and occupied by an accidental growth of a lardaceous consistence, and an ash-white colour. This tumour was continued into the space which separates the cricoid cartilage from the posterior part of the thyroid, and appeared a little outside of and behind the larynx. A portion of the thyroid cartilage on the left side was carious. This same tumour projected from the ventricle, when it assumed the consistence and colour of a

mucous polypus, and encroached considerably upon the cavity of the larynx." We will not repeat the post-mortem appearance of the lungs and other organs. In this instance what the termination of the case might have been if the polypus of the interior of the larynx had been recognized and removed, we cannot say.

In the third instance, from Gluge (obs. 26), the larynx was opened, but the patient died soon afterwards. In this case, as in the last, the tumour was not recognized. It was very large indeed, originated on the mucous membrane of the larynx, occupied almost the entire cavity of this organ, and caused a considerable projection externally.

In the fourth case, from Bertherand, of the Strasburg military hospital, (obs. 31,) the patient was a Polish superior officer, sixty years old; his health was good, and he complained only of dyspnoea and a croupy cough, which had gradually increased during two years, and had lately become very severe at times. The operation was performed when the patient was *in extremis*. He did not experience much relief, until some hours after the larynx had been opened and the canula introduced. *The patient died on the ninth day* after the operation, of bronchitis and pneumonia, attended with the formation of small abscesses in the right lung and liver. Moreover, the thyroid body was much enlarged, so that it displaced the pharynx and oesophagus, and it had undergone a cancerous degeneration, as had also the right lung and the liver. But the polypus escaped the notice of the operator during the patient's life, and was only recognized after death; this was the case, as we have seen, in the last three instances, the operation having been undertaken in ignorance of the existence of a polypus, and simply to relieve the symptoms of obstruction.

The fifth patient was operated upon by Mr. Ehrmann himself. We have alluded to this case before (obs. 29). The character of the symptoms admitted of no delay, and their cause seemed to be unmistakeable. The incision was made along the median line of the neck; the crico-thyroid membrane, the cricoid cartilage, and the first two rings of the trachea were divided; very little bleeding followed; a canula was introduced into the opening, and the patient was entirely relieved. M. Ehrmann determined to postpone the conclusion of the operation, until his patient had recovered from the depression and fatigue which she had suffered before it. Accordingly, after forty-eight hours had elapsed, the patient's condition being now very promising, he continued his first incision, *the canula being retained in the wound*, through the thyroid cartilage towards the hyoid bone. The polypus was then removed by excision. The patient did well; on the twenty-first day, the air ceased to pass through the opening, and at the end of a month, having spent a week in the country, she was quite well, and the wound had entirely healed. She was attacked with typhoid fever about seven months afterwards, and died. The larynx was carefully examined; the left inferior vocal ligament, upon which the polypus was seated, presented a few very small granulations upon its surface, and one, rather larger than the rest, was situated at the point of junction of the two inferior vocal ligaments.

In the horse and cow, the operation, performed under similar circumstances to those present in the human patients, was successful.

The author advises that the operation should, if possible, be performed as he practised it in this case, *i. e.*, that the patient should be allowed to rest and recruit after the first part of the operation, and that during the performance of the second part the canula should be left in the windpipe.

We have been exceedingly interested by the perusal of M. Ehrmann's book, and commend it to the attention of the profession.

F. W. S.

BIBLIOGRAPHICAL NOTICES.

ART. XV.—*Elements of Medical Jurisprudence*. By THEODRIC ROMEYN BECK, M. D., LL.D., Prof. Mat. Med. in the Albany Medical College, &c. &c., and JOHN B. BECK, M. D., Prof. Mat. Med. and Med. Jurisp. in the College of Physicians and Surgeons of the City of New York, &c. &c. Tenth edition. Vols. I. and II. Albany, Little & Co. 1851: 8vo. pp. 866—948.

Medical Jurisprudence. By ALFRED S. TAYLOR, F.R.S., &c. &c. Second American, from the Third London edition; with Notes and Additions by R. EGGLEFIELD GRIFFITH, M.D., &c. Philadelphia, Lea & Blanchard, 1851: 8vo. pp. 670.

WE have placed above, the titles of the two best treatises on medical jurisprudence in our language; both of them new editions of standard works, and both of them bearing unmistakeable evidence of the industry, and research, and discrimination of their authors. It would be difficult to enter upon a discussion of their relative merits in the space allotted to us, nor do we feel at all inclined at this late date to say, where each has so much merit, that one is better than the other. We are perfectly satisfied that either one contains an amount of information which will place the reader in full possession of the elements and practical bearings of the science of which it treats.

Since the publication of the previous American edition of Dr. Beck's classical work, medical jurisprudence has made rapid strides in advance; and one of the best proofs of the fact is contained in the introduction to this edition, viz., that the authors found it necessary to add several hundred pages to their last London edition, in 1842, of which this was at first intended to be merely a reprint. The pages of this Journal, for years past, have borne constant evidence of the untiring and *inevitable* research of Dr. T. R. Beck, whose observations and extracts from foreign and domestic sources have filled that portion of it devoted to medical jurisprudence; and the writer of the present notice bears his testimony to the same effect; for, having taken much interest in the subject, and consequently had occasion to examine the journals, he found it almost impossible to furnish a single novelty to this department in which he had not been anticipated by Dr. Beck. It is almost unnecessary to say that the materials collected by Drs. Beck have been skilfully used, and have been arranged in such a form as to make their work worthy of the period at which it is published.

In one respect we are inclined to be at the same time pleased and fault-finding, and this is in the typography and getting up of these volumes. While the clear type, white paper, and large spaces and margin make them readable, they are too bulky for every day use, a fault in which our publishers are beginning to emulate those of former times, giving us, instead of folios and quartos, royal octavos quite as cumbersome and unhandy. This, however, is a fault of the dress, not of the matter.

Mr. Taylor's work has passed through three editions in Great Britain, and a second one has been called for by the demands of this country; a portion of it, that on poisons, having been previously reprinted from the author's separate work upon that subject.

In each successive edition, Mr. T. has brought down to the period at which they were written, the facts of the science, and the decisions upon the interesting questions involved in medico-legal investigations, corrected by more enlarged experience and matured judgment; and in the volume before us has presented an admirable and well-arranged treatise, in which both the physician and lawyer can find abundant information upon the subjects discussed, well digested, succinctly and clearly stated, and—as justly said by the late and lamented American editor—"of an eminently practical character." It is an

excellent text-book, and yet takes a much higher range than such books generally do.

We cannot close this notice without a brief allusion to the loss which science has met with in the somewhat recent death of the American editor, Dr. Griffith. He was too well known in this community to require a eulogy at our hands, for the greater part of his life was passed here, and the evidences of his laborious habits are to be found in the interesting papers contributed to this Journal and the able works he has published—in the professorial chairs which he filled both here and elsewhere—and in the valuable contributions he has made to various departments of natural history; for in many of these, as botany, conchology, and mineralogy, he was surpassed in acquirements by few. He was exceedingly industrious in his habits, untiring in his zeal for knowledge, remarkably retentive in his memory, reading everything and stowing away for future use, and yet not selfishly gloating over the treasures he had discovered. Such a course would have ill suited one of his cheerful and animated disposition. He loved society both for the instruction and pleasure he derived from social intercourse, and because it gave him an opportunity to impart to others the knowledge he had himself acquired, and which he felt constrained to scatter about him as an outpouring of his own good heart for the benefit of others. He has left behind him the enviable reputation of having contributed to the extent of his ability—and that no mean one—to the cause of science; and we can only regret that his labours are ended at a time when she might have reaped from them still larger benefit.

C. R. K.

ART. XVI.—*A History of the Disease usually called Typhoid Fever, as it has appeared in Georgetown and its Vicinity; with some Reflections as to its Causes and Nature.* By W. L. SUTTON, M. D., Georgetown, Ky., Maxwell & Co., Louisville, 1850: 8vo. pp. 127.

DR. SUTTON has presented, evidently with great candour, the result of his personal observations upon the particular form of disease which appeared in Georgetown and its vicinity, during the last six years, and believed by him to be identical with the typhoid fever of Louis. Even by those who shall reject as erroneous the remarks of the author in relation to the true character of the disease of which he treats and of typhoid fever generally, the work before us must be considered as one particularly interesting, inasmuch as, admitting his diagnosis to be correct, he has shown very conclusively that enteric fever may occur, in the form of an extensive endemic, unattended by some, at least, of what have been considered its characteristic symptoms.

It is to be regretted that Dr. Sutton was able to make an examination after death in only three of the fatal cases which occurred during the period over which his observations extend. In each of these cases disease and ulceration of the intestinal glands were present. In the first case:—

“The small intestines were red internally throughout their course; near the ilio-cæcal valve they were more highly coloured externally, and internally presented elliptical plates distinctly elevated, and some of them ulcerated in numerous distinct minute points: solitary glands distinctly thickened, and some of them ulcerated; the mucous membrane considerably injected, having veins, distended with dark blood, interspersed.”

The liver was “apparently healthy;” spleen not examined.

In the second case, the liver, also, showed no indications of disease; but the spleen was enlarged, almost globular in shape, very red, “and much softened; breaking down under the handling.” In the lower portion of the ileum, “several elliptical patches and solitary glands were found slightly ulcerated, without apparent thickening or diminution of the walls.”

In the third case:—

“The stomach was moderately distended with air and a little fluid; externally and internally healthy, if we except a small spot just below the central depression, which exhibited a group of innumerable minute red specks, as if

the point of a fine needle had been repeatedly applied. The small intestines in various places appeared diminished in volume, otherwise sound until we approached the lower end of the ileum, where externally it was dark and contracted. Upon laying it open, a number of ulcers were to be seen, varying in size, some not larger than a grain of wheat, others larger than a twenty-five cent piece. They extended to the peritoneal coat. In some of the smaller ulcers, the edges were thickened; in the larger, there was no thickening of the edges. The intermediate spaces were filled with enlarged veins containing dark blood. Near the ilio-cæcal valve there were some large, very irregularly shaped ulcerations. In the cæcum and upper part of the colon, were similar ulcers, also near the anus. The colon externally was of a healthy colour, but very much diminished in calibre; internally, throughout as dark as a mucous membrane could well be. The rectum in the same condition. Some of the mesenteric glands enlarged. There was very little blood in the vena cava or any of the large veins. Indeed, there appeared to be a very considerable scarcity of blood in the cutaneous veins and those in the cavity of the body. Liver and pancreas healthy. Spleen enlarged and softened."

Dr. Sutton presents a very full history of the disease, as observed by him, from its onset until its termination in convalescence or death. From his remarks on its diagnosis, we extract the following list of symptoms, which are considered by him as those of most importance, presuming that the patient is seen during the first week.

"A tongue whitish, moist, or beginning to become clammy, with red papillæ showing through the white coat, and reddish edges and tips, giddiness, and tinnitus aurium upon rising; more or less uneasiness of the head; tenderness at the epigastrium or right iliac fossa; tympanitic state of the abdomen; diarrhoea, the dejections of a dirty yellowish colour, very liquid and very offensive, of a cadaverous odour, with or without griping; great muscular debility; a pulse increased in frequency, increased or diminished in volume and strength; occasionally a cadaverous smell of the body."

Although, Dr. S. remarks, we may have a case of typhoid fever in which a majority of the above symptoms are absent, or a majority of the symptoms without the fever, yet when "we have something like the assemblage just enumerated, we should be on the look-out for the disease."

The cadaveric smell of the body, Dr. S. has observed in many patients ill of typhoid fever; in others he has not detected it; he has also observed it in patients labouring under various other diseases.

In the disease described by our author, the rose-coloured spots upon the skin were not observed. "I have," he remarks, "examined patients daily, during the whole course of the disease, without finding a single spot. I will add, too, that I have not confined my examinations to a few patients or to a short period. It is my custom to examine all whites."

Of his medical friends of whom he made inquiry upon this point, one only had seen the eruption; it occurred in about one-half of the cases in his practice. In one instance Dr. S. saw them, in a relapse of the disease brought on by indiscretion in eating, they continued for only four days. They were absent in the primary attack.

Dr. S. has found sudamina to occur rather frequently; in perhaps a third of the cases.

It is successive in its eruption, and goes off by leaving very thin scales. "I have seen," he adds, "this eruption continued for several weeks after restoration to health, but most commonly it disappears about the time when convalescence is well established. I have seen one case, at least, in which it did not appear until the patient was in *articulo mortis*; at least, I examined for it in the afternoon without finding it; but at midnight I found the patient dying, with a plentiful eruption upon the neck and lower part of his face."

"Desquamation of the cuticle has been observed something more frequently than sudamina. The scales of this desquamation are too large to have been occasioned by the debris of the sudamina. Its most frequent seat is the chest and back, especially about the loins and sacrum."

Thoracic symptoms of a grave character Dr. S. has rarely observed. He has

frequently seen a short, dry cough—"such as is usually denominated stomach or worm cough. Occasionally, there has been a slight rhonchus in respiration. Towards the termination of fatal cases, the respiration becomes more irregular, and sometimes hurried. The irregularity is often more marked in a sudden expiration than in anything else."

Of 43 cases of the disease, 26 occurred in persons between 15 and 30 years; nine in these over 30; and eight under 15. The proportion of whites to blacks was, in the bounds of Dr. S.'s observations, about 108 to 100. Twenty-seven out of 43 cases occurred in males, and 16 in females. Eleven of the cases terminated fatally, and 32 in recovery.

Of 192 cases, there occurred in

	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.
	3	12	16	8	26	21	21	25	26	17	8	9
Total.	Winter.			Spring.			Summer.			Autumn.		
	31			55			72			34		

Of these there were males 104. Females 88. Whites 118. Blacks 74.

Forty of the above patients were 40 years old and upwards.

Residents of Georgetown appear to have been equally liable to the disease as were young persons recently arrived there from the country. The population of the town is, however, we are told, stationary to a very great degree. The principal ingress being from students to the schools, male and female, and journeymen mechanics.

"We have," remarks Dr. S., "about two hundred students from a distance. Among these I have not known of more than eight or ten cases of fever in the six years; and I do not know that any one of them had been there less than a year. Neither do I know, with the exception of four, that any case was one of typhoid fever. I presume, however, that some of them were."

Insalubrious dwellings and localities appeared to have been the most common places for the occurrence of the fever; it was not, however, confined to these. In a considerable proportion of cases, the attack of the disease appeared to Dr. S. to have been brought on by an undue exposure to cold.

Dr. S. does not believe that the disease originated in or was propagated by contagion.

"A contagious disease," he remarks, "whose infection may remain dormant in the system for seven months" (the allusions are to facts detailed in the work before us), "or may be quickened into life in as many hours; which may appear in half a dozen members of a family, in as many days, without any chance of introduction from without, and then spread no farther in that family or neighbourhood; which can originate in divers families in the same village or neighbourhood—these families having no communication with each other; which can originate frequently at divers points in the country, and infect but one or a few persons—which, in one word, shall frequently set at naught all the laws of contagion as usually understood, although it may, at times, seem to obey these laws, is a contagious disease which I do not profess to understand. Neither does it seem to me that anything is gained in etiology by calling in the aid of such an agent."

As ordinary sequelæ to the fever described by him, the author enumerates phthisis, in several instances; œdema of the face and limbs; loss of the hair, desquamation of the cuticle; in one case, a very painful affection of the tibia, accompanied by some tumefaction of the integuments, which were, also, exceedingly tender to the touch. In another case, a very painful swelling of the leg, the limb remaining permanently enlarged after the disappearance of the pain.

The disease, as observed by Dr. S., pursued, in general, a protracted course. In two cases, death occurred on the sixth day, from the presumed date of the attack. These, he thinks, were the shortest courses of the fatal cases that have occurred under his notice. In one case, complete convalescence was established on the eighth day. From two to three weeks, Dr. S. lays down as the average duration of the fever. In one case, it continued, however, for six weeks, and in another the patient was confined for twelve weeks or upwards.

"In general," he states, "there is a very gradual aggravation of symptoms for six or eight days; then there are from four to eight days, during which no appreciable change takes place. Then there is a very gradual amendment for five or six days more, and then a more rapid improvement."

It would seem that the severity of the attack had very little to do with its duration.

The following quotation is from the author's section which treats of the prognosis of the disease:—

"Great frequency of pulse, long continued, profuse diarrhoea, quick respiration, especially if performed irregularly; dry, black tongue, profuse hemorrhage at the latter stages of the disease; subsultus tendinum; low muttering delirium; loud raving, great prostration, discharges of flatus, strangury, suppression of urine, restlessness, and an impression of being well when very grave symptoms are present, are among the symptoms indicating great danger. If I were to select three symptoms indicating much peril, I would take a frequent weak pulse, profuse and continued diarrhoea, and a dry black tongue. Whatever other symptoms may be present, I hold that a combination of these is of evil import. I do not now remember a case of doubtful aspect in which one or more of these symptoms were not present, and the converse is true: I do not remember a case in which the three were united which was not a grave case. As one or more of these three, united with other symptoms enumerated as indicating danger, are present, so will the danger of the case be.

"We must remember, however, that there is no disease in which there is more reason to hope against hope. Thus, in a case in which there had been continued diarrhoea, with quick pulse, and great muscular prostration, profuse epistaxis came on in the last stage, and death seemed to be averted only by plugging the nostrils. Yet recovery was at last rapidly effected. It may be proper to notice a case which I saw in 1849. A young gentleman had been very low for more than a week. Among the grave symptoms was free hemorrhage from the bowels. After one of these discharges, he sank very much, his pulse became very frequent, and too weak to be counted, and it seemed as if death must speedily ensue. He seemed at least as low, if not lower than the last patient. Yet he recovered, notwithstanding the continuance of hemorrhage from the bowels for twelve or fifteen hours after. Again, in a case of extreme prostration, profuse diarrhoea, delirium, and where, in truth, the patient was abandoned by his physician, the pulse remaining tolerably steady, recovery took place.

"Thus it is that, in all cases, we must lean to the side of hope. On the other hand, we must not forget that there is another side to the picture. In a few cases in which the disease has apparently been mild, when in fact no very grave symptom has shown itself, when the convalescence is considered as already set in, a perforation of the bowel may take place, and death speedily close the scene. I have seen a case in which, for four weeks, the pulse ranged from 60 to 80, the bowels never much troubled, the tongue nearly natural, no undue heat of skin, indeed no bad symptom occurred, if we except a moderate but obstinate pain in the occiput. During all this time, the patient sat up more or less every day, generally in a room adjoining his bedroom, yet, at the expiration of this time, he began to become deaf, his pulse slowly increased in frequency, his tongue became gradually coated and dry, presently delirium set in, and during the sixth week he died.

"Again, a case may be severe, but improvement may appear to have commenced and continued for two or three days, when an aggravation of symptoms may take place, and the patient steadily grow worse, until a fatal termination ensues. This aggravation may occur without any cause apparent to the physician or nurse. It is frequently charged upon improper indulgence. If this last has been the cause, we may hope, by diligence and attention, to remedy the evil, but if it is not, the prospect is truly gloomy, as I do not remember a case of recovery from this state.

"I have found profuse hemorrhage, in the last stage, much less fatal than I was prepared to expect from reading or reflection. I remembered but ten cases in which it occurred. In two only did death follow. In two cases where I

was satisfied a perforation of the bowel had taken place, and when the patient evidently was to live but a few hours, each was impressed firmly with the idea that nothing was the matter. I have found strangury and suppression of urine both to be symptoms of evil import. The patient from whom it was necessary to draw the urine daily for six weeks was the only case of recovery in which either symptom was discovered.

"The case mentioned, in which a general rigidity of the muscles occurred, recovered. I ought, perhaps, to state that there was no permanent rigidity, but it came on when the body was to be moved. It continued to recur for thirty-six or forty-eight hours."

Thus far, our analysis of Dr. Sutton's work has been confined exclusively to the personal observations of the author. We come next to his view in reference to the character of the particular form of disease described by him, and of the nature of typhoid fever in general.

In regard to the supposed specific character of typhoid fever, and its entire distinction from typhus fever, our author calls in question the validity of the evidence upon which these opinions are based.

"If this subject could be settled," he remarks, "by the authority of a very considerable number of highly eminent men, it might be now considered as put to rest. But whilst expressing my unfeigned and very high respect for, and confidence in, these gentlemen, I am not yet prepared to consider the matter as placed beyond controversy. They prove, conclusively, that, according to their observations, a certain train of symptoms has almost always (always, if you please) been followed by ulceration of Peyer's plates; that after another train of symptoms, those plates have never been found ulcerated. Hence, they conclude that these two trains of symptoms denote two diseases specifically different. They may be right, but are they necessarily so? According to my observation, and that of physicians immediately in this vicinity, the rose spot does not appear as a symptom of typhoid fever. Am I to set this against the observation of the profession, and conclude that this eruption is not characteristic of the fever? Assuredly not. But the symptoms of typhoid and typhus fever do not differ more than those which attend different epidemics of bilious fever. For example, we may have, in one summer, an eruption of red pimples or blotches, great nausea and vomiting, and bilious diarrhoea to attend it. Perhaps the next summer, it will be without either, and obstinate costiveness be present. Yet we hold the two years to have produced the same disease, very much modified, it is true, in appearances. Again, is there more difference between the symptoms of typhus and typhoid fever than between those of the ordinary intermittent, and aggravated forms of bilious fever, of the remittent and congestive types? Yet we consider them essentially the same disease.

"Dr. Power informs us that the vessel *Rio Grande* brought (to Baltimore) seventy cases of *typhus*, and that four of the seamen and several steerage passengers had *typhoid* fever. Professor Drake found, among the emigrants at Gross Island, patients with typhus and typhoid fever, *i. e.*, those with rose spots and those with petechiæ. These are rather equivocal evidences of the non-identity of the two diseases, yet certainly not proving their identity. But we find others as well situated to observe, and as well qualified to judge, view the matter in a light very different."

Dr. S. quotes the account given by M. Landouzy (*Archives Générales*, Jan. et Feb. 1842) of an epidemic fever which prevailed at Rheims in 1839-40, which, if it were possible to identify a disease by symptoms, was unquestionably one of *typhus fever*; but, in the examinations made in six fatal cases of this epidemic, "the intestinal lesions characteristic of typhoid fever were present." In reference to this fact, Dr. Bartlett queries whether, under certain circumstances, the cause of both typhus and typhoid fever may not be so commingled as to give rise to a mixed disease, in which there is a combination of the elements of both. Professor Wood also suggests the occurrence of this occasional amalgamation of the two diseases.

"Gerhard acknowledges to have met with six cases of true typhus in which the intestinal lesion resembled dothinerterite, and admits that the follicular ulceration occurs in the British epidemic, which he regards as true typhus ('*Dickson's Practice*,' 412)."

"With regard to the amalgamation of specific diseases," Dr. S. observes, "thus suggested by Profs. Wood and Bartlett, it would certainly ill become me to deny the possibility; but, inasmuch as the explanation seems to me to be gratuitous, and, so far as I know, unsupported by analogy, but rather contradicted by it, I think it ought to be entertained with caution and hesitation. Under such admissions by Bartlett, Wood, and Gerhard, I do not know that it would be too much to say, in the words of *Gaultier de Claubry*, that there are no means of distinguishing typhus from typhoid fever, in relation either to lesions or the symptoms of the two diseases. Again, 'the identity of the two diseases is henceforth put beyond a doubt.'—*Bartlett*, 302."

Dr. S. urges the fact that the rose-coloured spots are absent in many cases of the so-called typhoid fever—in five out of fifty-four cases observed by Louis; in one-tenth of the cases, according to Bartlett; in about one-fourth of the seventy cases referred to by Chomel and Genest; and in all of the cases which fell under the notice of himself. Is, then, he asks, this eruption to be considered an essential symptom?

"Is it true that any eruptive fever ever prevailed in which one-fourth or even one-tenth of all those affected failed to exhibit the eruption? Or is there any instance in which an eruptive fever prevailed for six years in any one location, without the eruption being observed, though diligently sought for?"

The space of time during which this eruption makes its first appearance, Dr. S. thinks rather too long for a specific eruption—that is, if we are to reason on this disease from analogy. Its appearance is said to occur from the sixth to the twenty-fourth or thirty-fifth day. I do not, Dr. S. remarks, know of any exanthem in which so much latitude in the period of eruption is allowed, there being nothing to interfere with its regular development.

Dr. S. insists that, as the eruptions, rose spots, and petechiæ are considered as of much importance in distinguishing typhoid from typhus fever, they ought themselves to be distinguishable; and yet three out of six cases investigated by Dr. Shattuck exhibited both eruptions. According to Dr. Stewart (*Bartlett*, 294) in the more severe cases of typhoid fever, the eruption "may exhibit, during the period of increase, four different states, being florid, dark, livid, and petechial. When the hue of the eruption is florid, it disappears readily under the finger; when dark, it still disappears, but more slowly; when livid, semi-petechial or pseudo-petechial, as it has been called, it is only partially effaced; and when petechial, it is not at all affected by pressure. In many cases, it remains florid throughout; in others, it presents one or more, and in not a few, all these alterations."

This change, from rose spot to petechia, was also observed by Prof. Drake, at Gross Island, and by Dr. Upham, at Deer Island Hospital.

"Respecting this eruption," says Dr. S. "there is another point not altogether unworthy of consideration. Prof. Bartlett refers, p. 108, to several cases in which this rose-coloured eruption appeared during a relapse after an attack of this fever; and a similar case is noticed in this essay. This, it seems to me, is proving too much. I do not know that the eruption peculiar to small-pox, measles, or any other exanthem has been observed to reappear after having disappeared in the regular course of the disease. If my notion on this point is correct, reasoning from analogy, we should not expect the eruption of typhoid fever to reappear, considering it an eruptive disease. If, then, the eruption in the second instance is accidental, not proper to the disease, the same eruption appearing in the first instance, may be accidental, not essential to the disease, but dependent on intestinal irritation." Again, he remarks, "Is it unfair to doubt the distinction between the rose spot and petechia? If the same identical spot is a rose spot one day, a petechial the second, and a rose spot again on the third, it does seem to me that distinguishing them apart is alike impossible and useless. Hence we must not be surprised, nay, we may expect, that the rose spot and petechia shall eventually turn out to be the same eruption under different modifications."

It is the peculiar intestinal affection, the inflammation and ulceration of Peyer's patches, which Dr. S. thinks those who place typhoid fever among the exanthems ought to consider the characteristic eruption. It is held, he re-

marks, to be characteristic of the disease—essential to it—that it is found in no other acute disease, if in any at all. Our author adduces facts which, in his opinion, render the doctrine that the presence of the intestinal disease referred to is the characteristic mark of a specific fever, extremely doubtful. The first class of facts are founded upon the statements of Lombard of Geneva, Shattuck of Boston, Fouquier, and Prosper Dor, that they have observed cases which, during the lifetime of the patient, presented the characteristic symptoms of typhoid fever, but in which, after death, no disease of the elliptical plates of Peyer was discoverable. The second class of facts are founded upon a series of observations, showing that the intestinal disease, supposed to be peculiar to and characteristic of typhoid fever, is met with in various other and very dissimilar affections. Thus, Broussais found it in a case of intermittent fever, changed into continued fever.

It may be objected, Dr. S. observes, that in this and some other examples cited in his essay, the ulcerations are not those peculiar to typhoid fever. Bartlett states, after Chomel, “that one of the most constant and uniform characteristics of secondary lesions, consisting generally of specific inflammations, is the fact of their being *disseminated*; of their occupying numerous and circumscribed spots in the tissues and organs of the system.” “Now, in every respect, the intestinal lesion of typhoid fever corresponds to this class of pathological alterations. It is disseminated, occupying the same glandular tissue at different points of the intestinal mucous surface.” It is true he does not assert that the ulcerations are confined to the glandular structure and the mucous membrane covering it; but such is clearly the impression conveyed by the language.

“That such is not always the fact, I have evidence,” says Dr. S., “to me conclusive. In Sylla, the autopsy of whom is given in this essay, many of Peyer’s patches, and of the solitary glands, were ulcerated, and, for aught I know, the ulcerations may have been confined to the bounds of the glands; but at the lower end of the ileum there were several very irregular ulcerations, one of which was two inches long by one and three-quarters wide; a tongue of membrane not ulcerated, running up the broad end of the ulcer about half an inch wide and three-quarters long. In the cœcum and colon were similar irregular ulcerations. I hold that these ulcerations were not situated in Peyer’s plates at all, because the form and proportions were not such as to admit that interpretation. Or, if they were so situated, the contiguous membrane must have been involved. I had the pleasure of showing the casts of some of these ulcerated portions of intestine to Prof. Bartlett, who recognized them as examples of the lesions of typhoid fever.”

Dr. S. adduces from Horner (*Path. Anat.* 307) an example of ulceration of the jejunum and ileum in a patient dead of pulmonary phthisis; also the statement made in Wistar’s *Anatomy* by Pancoast, that the intestinal glands are frequently the seat of lesion in phthisis as well as in typhoid fever—no attempt to discriminate between them being made; and a case of phthisis which fell under his own notice, in which thickening, increased coloration of the patches of Peyer, and of the solitary glands of the ileum, were detected after death. Dr. S. also refers to the fact that Mackintosh detected ulceration of the ileum and colon in fatal cases of infantile remittent fever—that the same ulceration is common after death from small-pox—that it is met with in those who die of painter’s colic—in children who die during dentition, and a number of cases, including one of dysentery, recorded by Abercrombie in his work on the stomach. Of these last, Dr. S. remarks:—

“Here, we have a lot of cases, some of which, by symptoms and appearances on dissection, were pretty certainly cases of what would now be called typhoid fever; some in which the symptoms would seem to indicate that to have been the disease, but the dissections did not show the peculiar lesions of typhoid fever, but either a corresponding lesion situated in the colon or an analogous one situated in the ileum. The last is considered dysentery by the author, but it seems doubtful if it was not truly one of typhoid fever. At any rate, the appearances on dissection were analogous to those having a striking resemblance to typhoid fever.”

“But it may be urged against many of the cases adduced that they are not

described with sufficient minuteness to enable us to form a proper opinion as to their value. That English writers do not discriminate between typhus and typhoid fevers. That many cases which have been described as infantile remittent fever; and even cholera infantum, were in truth typhoid fever. In one word, that things identical have been considered as altogether dissimilar. To prevent, on the one hand, confounding things which are really different, and, on the other, separating those which are alike, is many times a work of great difficulty. Such is the matter now in controversy.

"Let us recapitulate this section somewhat. I have declared that the typhoid eruption, the rose spots, though diligently sought for, had not been found in this vicinity. I have exhibited proof that, in some considerable proportion of cases, say from one-tenth to one-fourth, it is admitted to be absent. That in some cases, whether of typhoid or typhus fever it matters not, both these and petechiæ appear upon the same patient. That in some cases they are convertible into each other, running from rose spots to petechiæ, and *vice versâ*. That the lesions of the elliptical plates have not been found where, from the symptoms, we have a right to expect them. That these lesions have nevertheless been found where we had no right to expect them. That in other cases we have found analogous lesions in the ileum, and corresponding lesions situated in the colon.

"It may be argued that the case quoted from Broussais was one of genuine typhoid fever, occurring after one of intermittent fever; or that it was typhoid fever from the beginning. The history of the case, as given, does not seem to warrant that conclusion. Still the author may have had his attention so fixed upon some features of the case, as to prevent his seeing others important to the proper understanding of it.

"In the cases from Horner, there is evidently no suspicion entertained by the author, that anything of what is usually called fever affected the patients. Matthew's case, given before, I considered one of pure consumption, and there was nothing to change my opinion; and I have the satisfaction of having a confirmation of this opinion in the judgment of Dr. Bartlett. Perhaps it would not be uncharitable to suppose that some of the cases reported as infantile remittent, or even as cholera infantum, were in truth those of typhoid fever, as I cannot conceive that it would be difficult to confound them; but I should suppose that painter's colic ought not to be so confounded.

"Upon a careful examination of the whole ground, shall we conclude that the lesions of Peyer's plates are invariable and characteristic of typhoid fever—that they are to be found in no other disease? Truly, I cannot bring myself to do so. Shall we conclude that they do not indicate a distinct form of disease, or even a distinct disease? I am not prepared for that either. Shall we say that they are an accidental symptom which may occur in many different diseases, and even exist independent of other symptoms? It behooves us to be cautious in this matter. In our profession, we have had a sufficiency of hasty conclusions, drawn from insufficient observations, which have been replaced by other conclusions drawn from facts equally unsatisfactory. I hope we shall leave this matter under investigation, until we shall have accumulated facts sufficient to enable us to come to conclusions which shall remain permanent."

Such, in brief outline, are the objections advanced by Dr. S. to the validity of the views entertained by many of the leading physicians of Europe and America as to the distinct and specific character of typhoid fever. They are presented with the utmost candour, and evidently in good faith, from a strong conviction of their weight, if not their conclusive character. Some of them are deserving of a serious consideration, while others appear to us rather specious than real.

Of the actual existence of typhoid fever, as described by Louis, Chomel, and others, connected with, and perhaps dependent upon follicular inflammation of the intestines, there can be no possible doubt; the difference which exists between its pathological nature and characters, and those of ordinary typhus, is, in our opinion, still an open question. If typhus fever depends essentially upon a certain morbid condition of the blood, as is probably the case, then we can readily understand how typhus and typhoid fevers may co-exist in the same individual with a combination of the characteristic symptoms of both.

We have never seen a well-marked case of typhoid fever that has proved fatal, in which, when an examination after death has been made, the peculiar intestinal lesions were absent, though we have, in a few instances, detected them in cases of well-marked typhus fever, occurring in immigrants, landed with the disease upon them from on board of infected vessels, as well as in cases among the same class of persons, in which, during life, the distinctive symptoms of typhoid and typhus fevers were so completely blended as to render it doubtful to which of these forms of disease they properly belonged.

The same condition of the patches of Peyer, and of the solitary glands so generally observed in fatal cases of typhoid fever, is unquestionably observed in patients who have died of other diseases. It is almost invariably met with in children who have died of what has been termed infantile intermittent fever; but this affection, from a careful analysis of its symptoms from its onset to its close—taken in connection with the lesions discovered after death—I am well convinced, is the same disease as the typhoid fever of the adult, modified, and that very slightly, by the age of the patients. The same lesions are invariably present also in infants, who have perished from genuine cholera infantum; and even here, the disease bears, in many of its features, so close a resemblance to typhoid fever as to lead to a suspicion that it is closely allied, if not identical, with it. Acute or chronic inflammation of the Peyerian patches terminating in ulceration, is, however, one of the most common lesions discovered in infants that die during the period of suckling, and in cases where, during life, there could be no suspicion of the presence of typhoid fever. In the adult, also, if we are to depend upon the apparently candid and careful statements made by observers of respectability, the same lesions have been discovered after diseases having nothing in common with typhoid or typhus fever.

Our own observations have convinced us that the typhoid is a distinct disease from typhus fever. This conviction has resulted from a consideration as well of the well-marked distinctive symptoms by which it is attended throughout its progress, whether towards convalescence or a fatal termination, and the lesions discovered after death, as of the peculiar circumstances under which the disease ordinarily occurs, so very different from those productive of genuine typhus fever. Our diagnosis has been made up from the whole of the symptoms present in each case, without reference to the occasional absence of a single symptom, or to the occasional presence of those not usually met with in the disease.

While such, however, are our convictions, we feel no disposition to turn a deaf ear to whatever objections to them may be candidly presented. Our aim is truth, and in pathology, truth can only be attained by the accumulation of careful observations, and the utmost freedom of discussion in reference to the accuracy of these observations, and the validity of the deductions drawn from them. We ask, therefore, for the work of Dr. Sutton a careful perusal; let the views advanced by him be cautiously weighed, and adopted or rejected as they shall be found valid or invalid.

D. F. C.

ART. XVII.—*Illustrations of Syphilitic Disease.* By PHILIP RICORD, D. M. P., Surgeon to the Venereal Hospital (Hôpital du midi), Paris, &c. &c. Translated from the French by THOMAS F. BETTON, M. D., M. A. N. S., Fellow of the College of Physicians of Philadelphia, &c. *With the addition of a History of Syphilis, and a complete Bibliography and Formulary of Remedies, collected and arranged by PAUL B. GODDARD, M. D.;* with fifty large quarto plates, comprising 117 beautifully coloured Illustrations. Philadelphia, A. Hart, late Carey and Hart, 1851.

Good clinical reports are much more available and instructive to a practicing surgeon than formal treatises, just as the study of the classic marbles of ancient and modern art is more beneficial to the sculptor than libraries of critiques on the correct and beautiful; and the more faithful the transcript of

nature in either case, the more valuable is it to the student. In this view, we cannot but place a very high estimation upon the "*Clinique Iconographique de l'Hôpital des Vénériens*," of which the volume before us is a translation. In it, M. Ricord has recorded the experience of his hospital; and when the author's acuteness and accuracy of observation are considered, together with the vast field which is afforded for their display in the wards of that institution, the value of the book must be admitted. It contains, moreover, drawings from nature, executed by the best artists, which are as faithful representations of the cases presented to the inspection of his clinical pupils as could be provided, and indeed every one will confess, we are sure, the beauty and fidelity of the illustrations.

The views of M. Ricord are so well known, that we design, in this notice, simply to inform our readers as to the arrangement and the merits of this particular edition of his book.

The *primary symptom of syphilis—the chancre*—is first illustrated by reports of cases and by drawings. It is exhibited in a variety of situations, on the penis, in the urethra and bladder, on the neck of the uterus, in the vagina, at the anus, on the breast, on the groin. Its varying characters, too, are commented upon, and the conditions of these modifications relating to peculiarity of the tissue affected, to the general condition of the system, or the vascular state of the seat of the ulcer. These varieties are the healthy, the indurated, the phagedænic, the diphtheritic, &c. Many experiments are detailed to show the effect of inoculation with the matter secreted by a chancre, and which establish the fact that *such matter*, whether taken from a chancre on the external genitals, the urethra, the neck of the uterus, the bladder, the anus, the breast, or the mouth, or from a chancreous bubo, or from any other source, will, if properly inoculated, always produce a *chancre*, and that this result will not follow inoculation with simple pus or muco-purulent matter, such as is formed in *blennorrhagia*. The leading points of this interesting and exceedingly important matter are expressed in a brief review by M. Ricord of the report presented to the Academy with reference to this subject (pp. 144—154)—a report founded upon some cases which were submitted to the Academy by M. Ricord. We need scarcely add that our certain information upon this subject is due to the investigations of M. Ricord himself.

The volume contains several beautiful representations of vegetations sprouting from the urethra, from the surface of the glans, from the labia of the female, and from the anus. In some instances, these appeared to have arisen independently of any local specific cause; sometimes to have resulted from the irritation of a venereal agent.

The *constitutional contamination from syphilis* is illustrated under the divisions of *secondary* and *tertiary symptoms*. This distinction is based upon the phenomena attending the progress of the disease—certain tissues, as the skin and the mucous membranes, being invaded before certain others, as the fibrous tissues and the bones.

The *secondary symptoms* are presented to us in the form of mucous papula of the vagina, anus, and mouth; of the varieties of cutaneous eruptions, of iritis, &c. And the *tertiary symptoms* are described as "gummy tumours," (circumscribed indurations of the areolar tissue, which sometimes disappear under treatment, but more frequently, perhaps, suppurate;) sarcocele, ulcerations about the fauces, inflammation of the periosteum and of the bones, caco-plastic degeneration of, or deposits in, the muscular and osseous structures, caries and necrosis.

We have also read with great interest the details of several cases descriptive of the history of this horrid disease from the formation of the primary ulcer to the death of the patient, and including the result of the *post-mortem* examinations. In this world, at any rate, lust is oftentimes its own avenger.

"Magne pater divum! sævos punire tyrannos,
Haud aliâ ratione velis, quum dira libido
Moverit ingenium, ferventi tincta veneno."

Throughout the volume, we observe that the author digresses from time to time, from the report of a particular case, to generalize and to advance propo-

sitions with regard to groups of similar cases, both with reference to the pathology and the treatment of the disease. Thus the book combines, in some measure, the advantage of a clinical report and of a formal general treatise.

Of the merits of this first English translation of the volume, as now presented to us, we can speak in terms of commendation. The typographical portion of the task undertaken by the publisher is excellently well accomplished; the plates have been copied, particularly as regards the drawing, in a manner which is well calculated to make us feel gratified and hopeful as to the progress of the art in our country; in the matter of *colouring*, however, they are much inferior to the original—a point to which our artists will do well to devote particular attention.

The editor has not strictly observed the order of succession of the subjects treated of, as it occurs in the original; and we think that his arrangement is a better one, inasmuch as he has brought together the allied cases of the disease, instead of interspersing these promiscuously with others which they resemble only in having had a similar origin, and scattering all confusedly through the book. And he has, moreover, done a kindness to those who may refer to the volume for the practical information with which it is replete, by collating the many medicinal formula which M. Ricord has recommended, and grouping them all together.

Few persons, even of those who read French with much facility for their own amusement or instruction, are aware of the difficulty of making a correct, and, at the same time, an elegant translation for the perusal of others. But Dr. Betton has accomplished this task very happily. We have looked over his rendering of the original with considerable care, and only one passage has struck our eye as being decidedly faulty: this occurs at page 119, as follows: "Had I remained satisfied with these data, I might have believed in this case, as some do, in primary constitutional syphilis, or, with those who do not regard forms with regard to the limits of the infection, in a tardy hereditary affection." Even in this sentence, the author's meaning is appreciable, although we think it might have been transferred into more elegant English.

Dr. Betton has also made valuable additions to the work. He has prefixed to the translation a full *bibliography*, commencing with the year 1495, for which he certainly deserves the acknowledgments of all students in this particular department of surgery; and he has likewise drawn up an exceedingly interesting "History of Syphilis," from the earliest times. In this essay, the author displays the evidence of extensive reading, and great familiarity with the subject of which he writes, and he conveys to his reader the results of his investigations in a most pleasing manner. He cites abundant authority to show that syphilis was known and feared long before the date of its very commonly supposed origin—A. D. 1493–94. Indeed, if there were no direct mention of this disease by earlier writers, strong probability of its existence would be derived from the horrible degree and extent of licentiousness with which the earth has been cursed from time almost immemorial. It was surely not the immediate intention of this essay to "point a moral," yet we do not remember ever to have read a book which so strongly convinced us of the *innate bestiality* of human nature. All other vices and enormities might well be dispensed with, and last alone, with the crimes and miseries which it engenders, would be adequate to convert any paradise into a hell. If Christianity—not the Christianity of name and profession alone—had conferred no other boon upon mankind than the introduction and inculcation of purity of social life, how vast the benefit, how immeasurable the blessing! and how necessary the operation of such an influence!

"The soul grows clotted by contagion,
Imbodies and imbrutes, till she quite lose
The divine property of her first being."

There is one opinion advanced, or, at least, acquiesced in, in this preparatory essay, with which we cannot coincide, viz.: that prostitution, as an institution or a custom, must be submitted to, and winked at, if not actually established, under certain police regulations, "as a safeguard to the virtue of honest women." We cannot admit such a necessity; as well contend that street beggars should

be permitted and encouraged in their vagrancy, as a safeguard to the public and private purse. But the fact is that the greater the countenance which is extended to this class of parasites, the more they multiply, and the more common become burglaries and highway-robberies, thefts, and petty larcenies; because idleness, and its inevitable accompaniment and consequence, vice, are fostered; and after a time, even the street-walker, now so humble in his petition and demeanor, will, perhaps, exhibit himself in the more menacing attitude in which the "*poor lame soldier*" revealed himself to Gil Blas on his memorable journey to Penafior. Every penny given to a common beggar only tends to confirm him in his poverty and dependency; official protection makes the matter worse, so that the self-respect which has long recoiled from asking the first alms at length bows its head in presence of the trappings which the State hangs upon the breast of mendicancy. And so will it be with every species of vice.

We believe that, in every community in which just laws are duly enforced, "the virtue of an honest woman" will be her best and her sufficient protection, (excepting, perhaps, against those whom insanity has deprived of a proper self-control, and for the safe confinement of such the State is certainly answerable):

"A thousand liveried angels lackey her,"

to quote the beautiful and eloquent sentiment of the elder brother in the "*Comus*."

We believe that the lascivious desire is excited and perpetuated, in constantly increasing strength, by the physical indulgence, and by the fostering of impure emotions; and that, so long as the gratification is attained or attainable, the disposition remaining the same, so long will sensuality in thought and acts live and flourish. But we do believe that the desire may be overcome, and that, excepting in the instances of disease just alluded to, and for which confinement should be enforced, it will be overcome by a continued exercise of *rationality* on the part of the individual, i. e. *the human being* must steadily and nobly combat the disposition which inclines him or her to become *a brute*. The conflict may be long and arduous; the low desire and the proneness to yield to its promptings may for a time linger around their wonted home, like the spectre-lights which haunt old graveyards; but these will disappear as the moral atmosphere becomes freshened and purified.

Some, though but a few, of the plates, and the pages of letter-press accompanying them in the original work, have been omitted from this edition of M. Ricord's work; we regret this, both because of their intrinsic value, and because we think it is due to its distinguished author that the volume should be reproduced here in as nearly as possible the same degree of completeness with which he gave it to the world.

As it is, however, the present edition of so valuable a work is an important addition to our standard surgical library, and it will, we doubt not, be so regarded by the profession. It is published, too, at a price which makes it very much more accessible to all than the original can be.

F. W. S.

ART. XVIII.—*On Anæsthesia and Anæsthetic Substances generally; being an Experimental Inquiry into their Nature, Properties, and Action; their Comparative Value and Danger; and the best Means of counteracting the Effect of an Overdose.* By THOMAS NUNNELY, Esq., F. R. C. S. E., &c. &c.

THIS highly interesting and able communication is published in the sixteenth volume of the Transactions of the Provincial Medical and Surgical Association; of the second part of which volume it occupies two hundred and fifteen pages. It is the only extended experimental inquiry into the nature, properties, and action of the various anæsthetic agents, their comparative value and danger,

and the most reliable antidotes or remedial means to be resorted to when an overdose has been taken, with which we are acquainted.

Convinced of the vast importance of the question in reference to the practical application of these agents, and of the impossibility, from the deficiency and vagueness of the information in possession of the profession, of arriving at any accurate and certain conclusion as to their true value, and the circumstances in and under which they, or any of them, should be employed or not, Mr. Nunneley undertook a series of experiments to assist in affording that information, and to furnish evidence from which such inferences and deductions may be fairly drawn as shall, if possible, render their practical application as safe and certain as the nature of the case admits.

"For this purpose," Mr. N. remarks, "we require facts to guide us. The inquiry is therefore strictly experimental, and has been undertaken for the purpose of ascertaining:—

"1. If the property of inducing anæsthesia be confined to the few substances which have hitherto been used, or if there be not a large class of bodies which have in common the property of temporarily suspending consciousness or sensibility, or both, vitality remaining; and if this be so, whether these substances are characterized by any similar composition, or chemical alliance, and have a common *modus operandi* upon animal bodies?

"2. What their *modus operandi* is? or, in other words, upon what structures do they act? what changes do they produce? what are their physiological effects? is their primary effect local or general?

"3. Is there any one of these substances which should be selected in preference to, or to the exclusion of, all the others? Is there any one the temporary effects of which are more complete and certain, the permanent more harmless, and its administration more under our control than those of any of the others, that we should uniformly retain the employment of it, and reject the use of them?

"4. Is there any essential difference in the action of these substances according to the mode in which they are administered? Do they produce the same effects in whatever way they are carried into the body, or does the effect depend upon the nature of the tissue upon which they are applied? and does the same dose, when applied to the same tissue, and in the same manner, invariably produce the same uniform results?

"5. Are there any symptoms by which we may accurately judge of their effects, and ascertain and control the point to which the system may with safety be brought under their influence?

"6. In case of an overdose, are there any means which can be employed to counteract the effects? Do we possess any antidotes, or are there any remedies? If so, what are they, in what manner do they act, and how should they be employed?"

Although Mr. N. admits that the answers he has given to these six propositions, which embrace a very wide field of inquiry, or perhaps to any one of them, may not be complete and satisfactory, still the series of experiments upon which these answers are based are in the highest degree satisfactory. If they do not settle conclusively all that it would be desirable to know in relation to the qualities and action of each anæsthetic agent, its relative value either absolutely, or under particular circumstances, having reference to the age, temperament, condition of health of the individual, and the nature of the cases in which the production of anæsthesia is desirable; they nevertheless throw much light upon each of these circumstances, while they are calculated to render the employment of this or that anæsthetic agent less a mere matter of empiricism than it has been hitherto.

The substances experimented upon by Mr. N. and of which the effects are detailed in the communication before us, are, chloroform, alcohol, spiritus vini of the Pharmacopœia, sulphuric ether, spiritus ætheris nitrici, Ph. L., nitric ether, acetic ether, chloric ether, chloroform and spirit of wine mixed, hydrochloric ether, hydriodic ether, hydrobromic ether, Dutch oil or chloride of olefiant gas, oleum æthereum, Ph. L., heavy oil of wine, aldehyde, two or more of these mixed together, iodoform, olefiant gas, light carburetted hydrogen, coal

gas, benzole, camphor, naphtha (three varieties), oil of turpentine, creasote, protoxide of nitrogen, hydrocyanic acid, coneine, hydrogen, carbonic acid, carbonic oxide, bisulphuret of carbon, sulphuretted hydrogen, bromoform.

The mode of administration was by—1. Inhalation, in various degrees of concentration, for a limited period. 2. Inhalation for a prolonged period. 3. Internal administration by the stomach and rectum. 4. Injection into the veins. 5. Limited application to the skin—local action. 6. A trial of various remedies and presumed antidotes.

The *post-mortem* appearances are given in each experiment when death was occasioned.

The animals submitted to experiment were chiefly taken from the four classes of the vertebrata; some also of the invertebrata were used, though dogs and cats were principally employed; yet Mr. N. thinks that the variety has been sufficient to show that, without exposing himself to the charge of unwarrantably generalizing, he may affirm the effect throughout the animal kingdom to be uniformly of the same kind, and therefore that he is fully justified in considering it would (as indeed with many of the agents we know is the case) be the same in man; and consequently, in applying the practical inferences to the human subject, we are not very liable to go wrong.

Mr. Nunnely details, first, the whole of the experiments, 363 in number, undertaken to solve the questions proposed in the six propositions already stated; next follow such remarks as the effects of each substance individually appear to call for; after which are presented the general inferences and conclusions which he supposes to be fairly and legitimately deduced from the experiments, in the form of answers to the queries propounded in the outset.

Interesting as are the results of all the experiments performed by Mr. N., and valuable as are the remarks made by him in reference to the anæsthetic effects and comparative value of each of the articles experimented on by him, we must pass them by and confine our present notice to the general conclusions drawn by the experimenter, and offered in reply to his leading queries. It is of course evident that the details of the experiments admit of no analysis; as their value to those who would desire to test by these the accuracy of Mr. N.'s deductions depends upon the minuteness with which all the details are given; and, in reference to his remarks upon the individual articles to which each series of experiments refers, we should scarcely be doing justice to Mr. N. or to our readers by attempting to give a digest or abridgment of them.

In reply to the first query, Mr. N. remarks:—

“The experiments related in the foregoing pages prove, most unequivocally, that the power of temporarily suspending consciousness and sensation, more or less completely, is not confined to the few substances which have hitherto almost exclusively been used for the purpose, but that many other substances possess the property in common with sulphuric ether and chloroform. Many in a less degree, some in an equal, a few in a greater, and, probably, there may be other substances in the various compounds of the ether and allied groups, which chemistry is almost daily adding to the list, that may be discovered to possess the power in a still greater degree.”

“If those bodies are excluded from our consideration which do not appear, though they may induce insensibility, to produce that condition of the system which is understood by the term anæsthesia, as the protoxide of nitrogen, and sulphuretted hydrogen, the other substances experimented upon may be arranged into three classes, according to the number of elements which enter into their composition:—

“1. The quaternary, into which, besides carbon, hydrogen, and oxygen, one other element enters, as nitric ether; these are very few in number, and not remarkable for anæsthetic power.

“2. The ternary compounds, which are far more numerous and powerful. They all agree in having carbon and hydrogen entering into their composition, while the third element is very varied. In the oleum æthereum, in aldehyde, in sulphuric and acetic ethers, it is oxygen; in chloric and hydrochloric ethers, in chloroform and chloride of olefant gas, it is chlorine; in hydriodic ether (iodide of ethyle), it is iodine; in hydrobromic ether (bromide of ethyle),

bromoform, and in bromide of olefiant gas, it is bromine; while in hydrocyanic acid, the third element is nitrogen. Moreover, of this third element, even when the same, the relative proportions may vary considerably, the anæsthetic power of the substance remaining very great; for instance, in the atom of chloroform there are three of chlorine, whereas, in the atom of chloride of olefiant gas, there are only two atoms, while the proportions of carbon and hydrogen are much greater in the latter substance than in chloroform.

"It is worthy of remark, that in all these bodies, with one exception, the carbon and hydrogen may be considered as forming a radical base, which unites with the oxygen, chlorine, iodine, and bromine, to constitute a neutral body, or, as we shall presently mention, to act as a base for another combination. In hydrocyanic acid, the base would appear to be formed of carbon and nitrogen, the hydrogen in this playing the part of an acidifier; the resulting compound being the feeblest and most unstable of all acids. This slight acidity can, however, be scarcely considered as a distinguishing character; for we find that conia and other similar vegetable proximate principles, where the same three elements constitute the substance, have a feeble alkaline action, the different character of these bodies depending, probably, rather upon the amount of nitrogen than of hydrogen.

"3. In the third group the substances are all bi-elementary; they are, with three exceptions, hydrocarbons; the exceptions being carbonic oxide, bisulphuret of carbon, and chloride of carbon. The most simple, obvious, and striking physical properties which the whole of these substances possess in combination is that of being gaseous, or of being so volatile that at the ordinary temperature they are readily converted into vapour.

"Although in the first group, that of quaternary compounds, the number of substances is limited, there are several of those which, on ultimate analysis, are found to consist of only three elements, which most probably, in mode of combination, have a strong analogy, if not identity with this group. For instance, acetic ether, although only containing hydrogen, carbon, and oxygen, has probably these elements arranged, in the first instance, so as to constitute oxide of ethyle and acetic acid, which as such, then enter into combination with each other to form acetic ether, as the nitric acid and oxide of ethyle do; this also may, perhaps, be the case with hydrochloric ether."

"If we analyze the composition, and compare the effects of each of the substances in the second group, we find that we may in succession exclude the third element of which each consists, and yet have an effective anæsthetic; thus, in sulphuric ether, we have oxygen, but no chlorine or nitrogen; in chloroform, chloride of carbon and chloride of olefiant gas, no oxygen or nitrogen, but chlorine instead; in hydriodic ether, iodine; in bromoform and bromide of olefiant gas, bromine is substituted; while in hydrocyanic acid, we have neither oxygen nor chlorine, but nitrogen. So that by this process alone, we should come to the conclusion that, however advantageous one or other of these third substances may be in modifying the action of the other two elements, the hydrogen and carbon of which the agent consists, they cannot be regarded as at all essential to the constitution of an anæsthetic body. This conclusion is rendered perfectly certain, when the constitution and action of the third group of substances are considered. Here most of the substances only consist of hydrogen and carbon, and yet among them are found agents which are possessed of considerable anæsthetic power, as, for instance, benzole, common coal gas, and olefiant gas."

"Hydrogen, if given alone, does not possess any anæsthetic property whatever, and if given in combination with any other body than carbon, it certainly does not act as an anæsthetic. With oxygen it is perfectly inactive; with most other elements it becomes a deadly poison. On the other hand, if other combinations of carbon are employed, as the bisulphuret of carbon, carbonic oxide, and chloride of carbon, it is found that these substances do act as anæsthetics; some of them not so safely, pleasantly, or so manageably, it is true, being altered and modified by the other substance with which the carbon is combined; but, nevertheless, still acting as anæsthetics. Hence, I think, we may legitimately arrive at the conclusion that to constitute an anæsthetic agent, carbon

must be present, and that by the combination of it with hydrogen, or perhaps chlorine, we have the basis of the most effective anæsthetic agents. Whether the hydrogen itself plays any important part or not, it is difficult to say with certainty; probably it does, for though, *per se*, it appears to be absolutely negative, yet, as in combination with sulphur it materially modifies the action of this, so we may also suppose it to modify the action of carbon when in combination with it, and thus that it plays an important part."

The general recapitulation of Mr. N. is as follows:—

"1. That no anæsthetic agent has yet been discovered which does not contain carbon.

"2. That the combination of carbon with hydrogen or chlorine constitutes the best binary agent, and that the greater the proportion of the carbon to the hydrogen, being at least equal to it, the more powerful the agent is; and if we could obtain a pure liquid of hydrocarbon, containing these equal proportions, easy to be volatilized, and of constant composition, it is highly probable that it would constitute a valuable and safe anæsthetic; for, if the carbon be too much in excess, as in benzole, where the proportions are as two of carbon to one of hydrogen, although the compound is a powerful and safe anæsthetic, yet it is neither so manageable nor pleasant as where the proportion of carbon is not so great, symptoms being developed which may reasonably be supposed to arise from the excess of carbon.

"3. That hydrogen and carbon may unite as a radical base with oxygen, chlorine, iodine, bromine, nitrogen, and perhaps some other substances, to constitute anæsthetic agents; and that these compounds, or at least some of them, may again unite with acids, consisting perhaps of the same elements as the base itself, and yet retain, to a certain extent, the same property as the oxide of ethyle; as nitric, chloric, acetic, and hydrochloric ethers do.

"4. That of these ternary compounds, those act the best, all things taken into consideration, in which the third element bears the least proportion to the hydrocarbon, especially the carbon; as, for instance, ether and alcohol, perchloride of formyle (chloroform), and hydrochlorate of the chloride of acetylene (Dutch liquid), and of the binary compounds, those in which the atoms are in equal proportion to each other.

"5. That substances which are analogous in composition and isomorphous in form, as in physical and chemical character, so are they often similar in physiological action; but where they are not isomorphous, their action is not similar, as chloroform and iodoform.

"6. That substances which are isomeric, or nearly so, but very dissimilar in physical and chemical properties, are also so in physiological; as witness several of the pure hydrocarbons, which, though very similar in composition, are very different in properties.

"7. That, should any other combination of elements be discovered which shall possess more valuable and important anæsthetic power than those yet known, its composition will probably be found in accordance with the principles now announced.

"Lastly. We may conclude that the action upon the animal economy of all true anæsthetic agents, whether carbons or hydrocarbons, whether simple or compound, is essentially the same in character."

In reply to the second query, Mr. N. presents the following as the answers resulting from his experiments.

"1. That the action of anæsthetic agents is immediately and primarily upon the nerves. That the heart, respiration, circulation, the blood, and the muscles are secondarily affected.

"2. That in the first instance all these substances act as stimulants, this action being more or less prolonged, but to some extent perceptible in all. In the more powerful anæsthetics, as hydrocyanic acid, chloroform, and the chloride of olefiant gas, the stage of stimulation is short and comparatively feeble (unless with the two latter the dose be very small, when it is evident enough), the sedative effect being quickly superinduced. With most of the others, it is more prolonged; with ether it is considerable, with aldehyde it is still more so; with the bisulphuret of carbon, turpentine, and naphtha, even

when inhaled, it is very great, and when applied locally, intense inflammation only is induced, anæsthesia scarcely being occasioned; while with alcohol, even when taken internally, unless the quantity be enormous, only the stimulant effect is produced at all.

"3. That the action is at first local. When these agents, in substance or in vapour, are applied to a limited portion of the body only, that portion is rendered anæsthetic; but that, if the application be more prolonged, or extended over a larger surface, then the effects become general. Thus we may paralyze a part or the whole of a single leg in the frog and toad; by continuing the application, the corresponding limb becomes involved, and a still farther continuation will affect the entire body of the creature, consciousness, sensation, and motion being all lost. In a large insect, or a reptile, we may stupefy the anterior or posterior half of the body with the attached limbs, the other part remaining unaffected. Even with the higher animals, the experiments demonstrate that, in the cat and rabbit, a part of a leg may be locally so affected as to be altogether insensible to the amputation of it, the general system not differing from its normal condition. In a man, a small portion of the surface or an entire finger may be made insensible, the feeling of numbness extending along the nervous trunks far beyond the part to which the application is made. Hence we may fairly conclude that the law universally holds good.

"4. That although the action of anæsthetic substances is upon the nerves, and principally upon those in connection with the cerebro-spinal axis, it is not primarily and directly upon the cerebral masses and sensorium, but upon the peripheral expansions of the nerves; that, *cæteris paribus*, the larger the number of these which can be directly and simultaneously acted upon, the greater will be the effect. Hence the *rationale* of the action of these substances when inhaled. When taken in substance into the stomach, they can only come in contact with a comparatively small number of terminal nervous papillæ, whereby is occasioned their stimulant, rather than their anæsthetic effect; but when inhaled, they come in contact with the whole expanded respiratory surface and the nerves there exposed. Of course, the more concentrated the vapour, the more intense and sudden will be the anæsthetic effects."

In answer to the third question, Mr. N. thus sums up his general conclusions from the experiments detailed.

"The substances which appear to possess the greatest power, and the effects of which are the least objectionable, are the oxide of ethyle (sulphuric ether), the gaseous carburetted hydrogen (of which common coal gas is perhaps the best), chloric ether, hydrobromic ether, chloroform, the chloride of olefiant gas, and the chloride of carbon.

"*Ether*, which, from being the first substance of this kind introduced was for some time almost exclusively used, has now almost ceased to be employed. In power, it certainly is much inferior to several of the other bodies; its action is not uniform and certain: more excitement is frequently manifested in its use; it produces much more irritation while being inhaled, and afterwards headache and feverishness are more liable to follow. These are objections so weighty, although in some degree counterbalanced by its general safety and the less liability to collapse supervening, that, unless under the circumstances pointed out in the remarks upon this fluid (that is, where there is reason to suspect any peculiar susceptibility to the action of the depressing influence of anæsthetics—such as disease of the heart of an asthenic character, or considerable constitutional debility), and other anæsthetics are not at hand, it will hereafter, I apprehend, be rarely used.

"*Common Coal Gas* is a safe and effective agent. Its cheapness is also an important recommendation. On the other hand, the disagreeableness of its odour as compared with the pleasantness of the chlorides, and its gaseous form, especially the latter, are serious impediments to its general employment. Under any circumstances, the inhalation of a gas is not of so easy and convenient accomplishment as that of the vapour of an easy evaporable fluid, more complicated apparatus being requisite. In places where the gas is not used for domestic purposes, the inconveniences of transporting and preserving it would be found to be objections not to be despised; but where other agents

are not at hand, or from any circumstances are not thought to be altogether applicable, no hesitation need be felt in employing this substance.

"*Chloric Ether* is a pleasant substance both in taste and smell, and in a very young and feeble person, I should feel disposed to employ it in preference to chloroform; but in ordinary cases, all other things being equal, inasmuch as a larger quantity of it is necessary than of either of the following, I should not think its use would be urged.

"*Hydrobromic Ether* is a safe, pleasant, and effectual anæsthetic, but inasmuch as it does not possess any such qualities as to render its employment more advantageous than some other substances, the very great cost of it will, unless this can be materially reduced, entirely prevent its general use. One manufacturer would not prepare it for me under one guinea an ounce.

"*Chloroform* is undoubtedly one of the pleasantest and most powerful anæsthetic substances known; indeed, until I showed the safety of the chloride of olefiant gas, by far the most so. That it is the safest can by no means be maintained with equal certainty; on the contrary, in safety I believe it to be inferior to all the other substances mentioned just below." Some of the indications for and against its use are the opposite condition of things under which the sulphuric has been recommended. "There is one unpleasant effect which sometimes follows the administration of chloroform that I have not seen noticed, but of which I have found more than one person complain, namely, that for long (even months) after its inhalation, they have occasionally experienced the same sensations as they did at the moment of breathing it."

"*Chloride of Olefiant Gas.* This fluid I have now administered so frequently in practice, that I think I am justified in stating the inferences drawn from the experiments upon animals are correct. It appears to be unattended with the troublesome excitement produced by ether on the one hand, and on the other with less of the tendency to collapse, which is so objectionable in chloroform; hence, if that only true test, experience in general use, should confirm this opinion, it will form a not unimportant addition to the list of anæsthetic agents. In the report upon the action of Dutch liquid, which I made in the *Journal of the Association*, I was misled as to the relative cost of it and chloroform. I have recently had reason to think that, owing to a want of care, ignorance, or some other cause, an improper method of manufacturing the fluid was employed, and that it contained spirit of wine, hence the lower cost of its production. I would, however, here state, that it appears not improbable a combination of the chloride of olefiant gas with spirit, not a mere admixture of the two fluids, but a combination during manufacture, may probably prove, not only a sufficiently cheap, but a valuable anæsthetic."

"*Chloride of Carbon.* Mr. N. is doubtful of the result of his experiments upon this substance, having reason to suppose that the substance employed by him was a chloride of a hydrocarbon, dissolved in spirit; should, however, experiments with a pure chloride of carbon confirm the supposition of its anæsthetic powers, and it be pleasant and safe in use, it will be generally employed, as it can be prepared on a large scale at a very small cost.

To question four, Mr. N. sums up his answer by referring to what has already been said in reference to the effects of each article, and the general statement that the same dose of an anæsthetic (with one exception—hydrocyanic acid), when taken into the stomach, does not produce the same effect as when inhaled. Mr. N. believes this difference to depend solely upon the greater extent of surface with which these agents are brought into contact when inhaled, and their being in a state of vapour. In regard to the uniformity of result from similar doses and modes of administration, Mr. N. remarks, that there is considerable variation in different individuals as to their susceptibility to the influence of these agents—one individual being far more easily affected than another. The very young animal will bear, not only a proportionably, but positively a larger quantity than the adult; while an older, but not an adult animal, will not bear the quantity which an old one of the same species will. Moreover, at different times, the same animal is far more susceptible to the influence of them than at another. Hysterical females, and lively excitable animals are much more susceptible to the action of these agents than the unexcitable and phlegmatic.

The quantity of any anæsthetic which is inhaled in a given time is of the utmost importance; *cæteris paribus*, the more concentrated the vapour, by far the greater is the danger. Given slowly, the same animal will inhale at least twice the quantity without dangerous symptoms, that, if inhaled very rapidly, would be not unlikely to cause death.

In reply to question five, Mr. N. remarks:—

“Though, without doubt, in every single case, we cannot control the effect, yet, as a general rule, it may be affirmed that we can both judge of the effects and control the point at which we wish to arrest the influence of these agents, provided due care be used in administering them.”

“To insure safety, the two principal points to be attended to in the administration of an anæsthetic are the quantity used alone, and the temperature at which it is given; of course, the higher the temperature the greater the quantity of vapour generated in a given time. It is of the utmost importance to take care that the vapour is not so concentrated as to produce a very sudden impression, or the nervous energy may be so suddenly and completely suspended that the heart at once ceases to act.”

Mr. N. thinks it a very common error, that of carrying the anæsthesia too far. In order that no sensation of pain should be produced, it is not necessary to render the patient so utterly powerless as to be altogether unable to stir. This, he adds, is a point of especial importance in the practice of midwifery.

“If it be determined to use an anæsthetic agent, in a case of parturition, that one should be selected which gives rise to the least depression, either temporary or permanent, and that in all cases especial care should be taken to give as little as possible. It is rarely, indeed, necessary to produce unconsciousness, which is rather prejudicial than not, by suspending the pains and retarding labour; a dreamy condition of half conscious obliviousness is, unless there be some considerable manual interference required, all that it is either necessary or desirable to produce. The plunging the woman into a profound state of unconsciousness has, I am convinced, often been productive of the worst and most fatal consequences.”

Nothing, according to Mr. N., taking all things into consideration, answers so well for the administration of the anæsthetic agents as a large, moderately fine linen handkerchief, folded first into quarter size, and then into a funnel shape. While it retains quite sufficient of the fluid, it does not obstruct the free ingress and egress of air, consequently the process of respiration is but little disturbed.

“The first indication of an animal being pretty well under the influence of the agent is the deeper, fuller, and more prolonged respiration; he inhales as though it were pleasant to do so. This is not always observed, though it very frequently is. At first there is some little excitement, and a disposition to move, the pulse is rather fuller and quicker, the pupils somewhat contracted, and the eyes wandering; there is often incoherent talking; these symptoms speedily pass off, and loss of volition, and indisposition, or inability to move comes on; the eyes become upturned, the pupils dilated, the pulse smaller, the muscles flaccid, and unconsciousness and insensibility ensue. If the quantity of vapour be now lessened, the respiration becomes more free and natural; if not, it will be laborious, and presently almost or entirely cease. The lips become closed, and in expiration, the cheeks may be distended by the air, which in escaping may produce a blowing noise. This I regard as a certain sign that the system is so fully under the influence of the anæsthetic as to border upon danger. At this point, or before (for the last symptom is by no means invariably present, the mouth being often open instead of closed), the pupils are widely dilated, the limbs become as flaccid as possible; there is no reflex action, the urine or feces, or both, may involuntarily escape, the conjunctivæ and the lining membrane of the mouth—often indeed the whole countenance, become pale and bloodless; the heart may be perceived acting most rapidly, with a short, feeble throb, the pulsation in the arteries being scarcely, if at all perceptible, and the respiration becomes either very quick and inefficient, or slow and gasping. If this entirely stops for any length of time, even though the heart may be felt still to move, recovery will be doubtful. In operating, if the surgeon should find

the flow of blood to cease, he ought *immediately* to be on his guard, as this may indicate such a condition of anæsthesia as to seriously compromise the heart's action; and if the inhalation be carried farther, might be fatal."

According to Mr. N., we may easily prevent the vapour from being inhaled at first in too concentrated a condition, by not putting the handkerchief in the first instance too closely over the face; or, if an apparatus is used, by opening the air valve. If there be no excitement, we are not to increase the strength of the vapour; but if there be excitement, then by applying the handkerchief more closely, or by shutting the valve, to terminate this by more fully and quickly bringing the system under the full influence of the agent, but taking care that, so soon as there are indications of unconsciousness and insensibility being produced, in a great degree to withdraw the anæsthetic, and only to give such a diluted vapour as shall just suffice to keep up the condition of insensibility, which, when once produced, may be usually maintained by a very moderate quantity of vapour; for it must be borne in mind that the *full effect* is not always *instantly* produced as the vapour enters the lungs, nor do the effects always immediately pass off; indeed, the rapidity with which the effects disappear does not always correspond with their intensity.

"If," remarks Mr. N., "these directions be attended to, rarely will death be occasioned by either ether, chloride of olefiant gas, or chloroform, although, as I have before stated, chloroform I consider to be the most dangerous of all; yet even of this, when due care is exercised, experience has shown the danger not to be very great."

Mr. N. adds that it is of considerable importance the stomach should not be distended with food; if it be, vomiting is much more likely to be caused, and he thinks a fatal result more likely to be induced in such a condition. In several of the animals in which a small dose destroyed life, the stomach was found distended with food recently taken.

In reply to the fifth query, Mr. N. observes that he considers safety in the administration of anæsthetics is rather to be found in guarding against the exhibition of an overdose than in seeking for an antidote or remedy against the effects of it.

"If an antidote of much value exists, it has yet not been discovered; of the remedies proposed, no one appears to possess any great power in such a condition of things as would call for its employment. It is true, *agitation, cold affusion, a cold stream of air*, perhaps *electricity or galvanism*, and some other *stimulants*, will expedite the process of rallying where the depression is not very profound; so, also, it is possible that *venesection*, by lessening the pressure of the column of blood upon the walls of the heart, especially the right, may, when this organ is still acting, facilitate its contraction, and thus assist in restoring the circulation; at the same time, it is by no means certain that, with such a depression as exists in the nervous energy, the abstraction of blood may not in itself tend to increase, or, at any rate, to prolong this condition, precisely as it would do in syncope, to which state it appears not improbable that induced by anæsthetics bears some considerable analogy; and this analogy would seem to point out the horizontal as the proper position for a person in such a state to be placed."

"In the great majority of cases, so long as the heart acts, and respiration at all goes on, the mere withdrawal of the anæsthetic is followed by the restoration of the functions, and therefore the question forces itself upon us as to the positive value or not of *any* of these means. If the heart has ceased to act, no blood will flow on a vein being opened. If respiration has ceased, and the heart does not move, *galvanism*, though it may make the voluntary muscles violently contract, only does this by the sooner exhausting their power to do so, without in any way restoring the vital functions. *Oxygen*, of course, if there be no respiration, cannot be taken into the lungs, and the performance of artificial respiration with it would be both difficult and incomplete, even were it at hand, which it would not in the great majority of cases be, while, so far as experiment and chemical action goes, it does not appear that, if it were ever so fully inhaled, even in combination with the anæsthetic substance, it would in any manner prevent the development of full anæsthesia, and therefore it cannot be for

a moment imagined it would in any way counteract the effects when they are developed. *Ammonia* we have seen to be useless and inert, whether given mixed with the substance, or after its effects were produced. The coldness and depression which in so marked a degree are present do not encourage us in the supposition that either *cold water* or *cold air* to any very great extent would be useful—a conclusion which the experience of their effects confirms. We are therefore reduced to seek just that assistance from their use as shall suffice to produce such a moderate shock, if the nervous system be capable of receiving any, as may cause a reaction and rousing of its powers, by which the heart and respiration may again be set in motion, or rendered more vigorous. This appears far more likely to be accomplished by the sudden dashing of a small quantity of cold water upon the face and chest, possibly alternating with heat to the latter, or such a moderate stream of air as may be produced by a fan, and not too violent agitation of the body, than by excessive violence, or by entire and long-continued immersion. A moderate interrupted compression of the chest, and pressure upwards of the abdominal viscera, should not be neglected, as tending to change the air in the lungs, and thus to get rid of the vapour there remaining; or, with the same intention, a stream of air might be, not too forcibly, blown through a small tube into the larynx for a minute or two."

Our readers, we are convinced, will not be displeased at the length of our analysis of Mr. N.'s most interesting communication. Anæsthetic agents are now extensively employed in every case where the occurrence of severe pain is anticipated. And the manner in which their bold and fearless administration is spoken of by some is certainly calculated to lead the inexperienced and incautious into the belief that the production of anæsthesia is attended with little or no danger, whatever may be the circumstances under which it is induced, the agent that is employed, or the quantity that is given. Beneficial as the results to be derived from the induction of anæsthesia in many cases unquestionably are—nevertheless, to derive from it all the good it is calculated to afford, with the least possible risk of danger to the patient, the proper practical application of all the anæsthetic substances becomes a most important question, and one that deserves to be well and thoroughly investigated. For having commenced in the proper manner this investigation, our thanks are due to Mr. Nunely. The general conclusions he has deduced from his experiments are of no trifling importance, and with them every physician should be made acquainted. This, so far as our circulation extends, we have now endeavoured to do; and though our extracts from the communication of Mr. N. have been somewhat long and frequent, we cannot close this notice without still further extending it by quoting his very forcible language in reference to *chloroform*.

"It is," he remarks, "of all the anæsthetics with which I am acquainted (with one exception), one of the most, if not the most agreeable, and at the same time it is possessed of very considerable power. It is for the most part pretty constant in its action; but I am also bound to add, it is one which requires more care in its administration than most of the others, and I would venture to say much more than has always in practice been exhibited. It is true that many fatal cases in which it has been given are known, but, I am firmly convinced, there are many more fatal cases which have not been reported. Even in those cases which have come to light, all sorts of explanations, and attempts to explain away the true cause of death, have often been attempted, rather than admit the fact of the person having been killed by the chloroform. This is, perhaps, scarcely to be wondered at, as the admission of the fact would be almost like acknowledging being accessory to the death of the patient, which most men naturally shrink from. A careful examination, however, of the preceding experiments cannot, I think, but convince any impartial person that, in reality, death in those cases was caused by the chloroform; either from some abnormal condition or peculiar idiosyncrasy, by which the person was rendered unusually susceptible to its influence; or, as I believe, far more frequently from a want of that experience and care in its administration which the exhibitor should have possessed and attended to. When I see statements by medical men that they have 'boldly administered' chloroform in quantities of from six drachms to an ounce and a half at a time without any ill effects, I cannot but

congratulate both the patient and the doctor that the rashness in employing such quantities has been equalled by the carelessness in administering it, so that by far the greater portion of the fluid has been wasted by escaping into the air of the room, rather than passed into the lungs of the inhaler, and thus the carelessness of the administrator has, contrary to what generally occurs, and which he would do well not to risk again, been the means of escaping from the effects of his rashness."

D. F. C.

ART. XIX.—*Sleep Psychologically considered with reference to Sensation and Memory.* By BLANCHARD FOSGATE, M. D., Physician to the New York State Prison at Auburn. New York, George P. Putnam, 1850: 12mo. pp. 188.

DR. FOSGATE, in the present essay, has given a very interesting, and in general correct, account of the phenomena of sleep. In his explanation of dreaming, he has, however, advanced a position which he will find it very difficult, if not impossible, to prove. We allude to his postulate that "the mind is *absolutely* sleepless." That during sleep the mental organ is still active—consequently, that we always, strictly speaking, dream—but, when the mental excitement is not so far "exalted as to arouse any of the senses," we do not, upon awaking, retain any recollection of the circumstance; for, according to Dr. F., "we are dependent on external sensation for a remembrance of what passes in the mind in somnolency." Perfect sleep, as defined by Dr. F., is the repose of all those organs of perception by which the mind is connected with the external world, in which state we retain no memory of our dreams, because "any mental operation not based in concurrent outward relation cannot be recollected."

Let us, however, do our author full justice, by presenting a few extracts from his general conclusions.

"Sleep," he remarks, "is a phenomenon of that part of our existence by which we are connected with the external world, and during sleep the mental operations proceed, though modified by its influence. During this state, the mind is restricted in its operations to the stimulus afforded by the activity of the innate powers of the cerebral organization, and as one consequence of this activity, the memory of past events is brought to view. We arrive at this conclusion from those states of mind in which we perceive that bygone circumstances are re-called and associated in the mental process. And, although, in these operations, the mind is brought to a remembrance of what has passed, the memory is not impressed with the thoughts which occupy it, while external sensations do not contribute their stimuli to its operations. To this conclusion we come, from those states of being in which we know that the mind was active while the senses were dormant, and there was no remembrance, on awaking, of what then transpired. From the fact that the mind is active without the stimulus of external sensation, but that without this stimulus there is no memory, and that the perception can be as readily stimulated by the internal as external sensations, we conclude that it is exclusively through the activity of the organs of perception that the memorial faculty is manifested, and that these organs must be approached through the special senses to develop this mental power."

Memory, says Mr. F., "is a mental element manifested through the activity of the organs of perception. It is requisite, however, that these organs receive their stimulus from certain sources, otherwise the memorial faculty will not be impressed. Where they receive their stimulus from the propensities or sentiments, the resulting mental operations are not remembered. From this circumstance, we apprehend, it is that phrenology has concluded the animal organs are not possessed of memory; but whether they are or not, they do not stamp the result of their stimulus indelibly upon the mind.

"Universal experience teaches that what we see or hear, we remember better

than what we imagine or read about; because memory is much clearer and more durable when its objects are perceived through the external senses than when it is merely a deduction of the mind, or, in other words, when it is only an intellectual impression."

It is not because in these cases the power to recall by a mental act images or ideas previously acquired—which act constitutes memory—but because the images or ideas which we receive by sight, and hearing, and feeling, are themselves more clear, definite, and durable than are the most vivid and accurate description of the objects, or scenes, or sounds, or sensations, to which these images or ideas relate. But the results of mere mental operations—the compound or modified images or reflex ideas which the mind itself creates—are as readily recalled as are the simple primary impressions received originally through the senses. Witness the mental creations of the poet, the painter, and the sculptor. Here images are recalled and modified, and combined, by a purely mental effort—and these modifications and combinations are again recalled at will by an effort as purely mental as the first.

"The perceptive faculty has three sources of stimulus: viz., through the media of internal and external sensations, and the powers of reflection. The thoughts which follow the impressions of the first, when unconnected with the second, are not remembered; and those flowing from the last, under similar circumstances, are imperfectly retained; but the perception of impressions through the organs of external sense develops the memorial faculty in its fullest power.

"Through perverted or imperfect sensations, perception is so modified that dreaming and insanity singularly harmonize. The perceptions being in consonance with the state of the impressions transmitted, the perception of actual existences is imperfect, and memory fails to recall and associate the past with the present in accordance with reality:—hence some of the incongruous results of the mental operation during these states.

"In old age, the organs of sense lose their nice property of receiving impressions perfectly; consequently, the perceptions are indistinct and the memory of recent occurrences is defective; but the remembrance of circumstances which occurred in times long past, when the senses were intact, is comparatively fresh in the mind. The mental operations that depended upon the internal impressions of those times are forgotten, and only those in which the external senses largely contributed are retained. If memory, as advocated by Dr. Combe, be a mode of activity of the knowing or perceptive organs, and if this activity can be stimulated by the will, then we may possibly account for this peculiar feature of advanced age. Early impressions having been made upon organs in good condition to receive and transmit them accurately to the perceptive faculties, a corresponding effect was there produced. Now volition is little impaired by age, and through this power the mind can at will recall mental perceptions; but the perception of impressions made through impaired organs of communication is so feeble from the imperfection of the instruments employed, that, owing to this feeble perception, there is but little for the will to act upon, and consequently, early perceptions are readily recalled, while those of recent occurrence are indistinctly remembered."

"During sleep, memory may be inactive from absence of external stimuli, and the judgment deranged through the operation of sensations unconnected with outward relations; but the imagination is often stimulated into its wildest fancies by the former, while the restraining influence of the latter is withheld. All the mental faculties are modified in their activity by sleep, because by it a different relation is established. When the mind is sound and the body awake, impressions from without have the controlling influence; but when asleep, the intellectual operations are stimulated by internal influences, or impressions from the affections or feelings,—consequently, a different result must be expected. It appears at least probable that intellectual operations induced by internal causes, are not, under any circumstances, the objects of memory to so great a degree as those produced by external objects. Certain it is that, during that stage of sleep in which the external senses are in abeyance, we know that from internal causes, there is excessive action in the mental organ, without

leaving any impression upon the memory. For example, we refer to voluptuous orgasms in sleep, in which, should the excitement be so exalted as to arouse any of the senses, memory retains the circumstance as a dream; but when the exaltation does not reach that pitch, the mind has treasured nothing of the occurrence. Yet in such instances the evacuation is incontestable evidence that mental action did exist, and that the mind was not asleep. Vigorous activity of a propensity or sentiment will stimulate the intellectual faculties to originate mental pictures to gratify the original desire; and in these cases the mental operations are not only diversified but intense—involving the greater part of the mental powers."

We would suggest whether seminal emission during sleep is always the consequence of voluptuous dreams; and, as it certainly is not, this illustration of Dr. F. falls to the ground.

Even admitting as correct all that he contends for as to the connection between memory and external sensual perception, does it prove that the mind never sleeps—in other words, that the mental organs are incessantly in a state of activity? Can any one suppose that, during the entire absence of all consciousness which constitutes profound sleep, the mental faculties are still in exercise? It will not do to say that they appear to us to be dormant because we retain on awaking no memory of their operations; and that this want of memory is owing to the complete repose of the external senses. We will not say that the fact must be proved, for it is unsusceptible of proof either direct or analogical. We know that a state of profound sleep is a state of utter unconsciousness; that all the phenomena of existence save those which are within the domain of the nerves of organic life, and a few reflex actions, temporarily cease. Now is it to be supposed that in such a state as this the operations of mind go on, even in a modified degree or manner? We infer that the mental organs as well as the animal, demand an alternation of repose and action—that sleep is as necessary to the one as to the other, from the fatigue which invariably ensues from too prolonged mental efforts—and from the fact that constant mental activity is known to be incompatible with the health and integrity of the brain. But there are different degrees of sleep. With a perfect interruption of any conscious relation to the external things by which we are surrounded and the circumstances in which we are placed, certain of the mental faculties may be in action; by these mental images may be revived, varying according to the portion or portions of the brain which may at the time be active, sometimes producing simple and congruous images, but at others a more absurd, incongruous, and impossible succession of mental phantasmagoria than almost the wildest imagination could conjure up during a state of wakefulness. In many cases, images are awakened in the mind during sleep by external impressions upon the half dormant senses, without external consciousness being aroused; nay, even the voluntary muscles may be put in action and the sleeper made to walk and to perform many of the ordinary acts of life through the agency of mental images, while external consciousness is still dormant.

In what are properly termed dreams, the reasoning faculties are never active. We never in our dreams attempt to compare and arrange the discordant images which dance before the mental vision. The most absurd and incongruous positions in which, while dreaming, we appear to be thrown; the fantastic shapes which surround us; the rapid change of scene; the annihilation of time and space, never excite in us the least surprise. Reason never asserts her province and resolves into its true elements this "baseless fabric of a vision." We never reason in our dreams. But we experience fear, horror, disgust, pleasure, and, contrary to what should be the case if Dr. F.'s views in relation to memory were all correct, we recollect the sensations in connection with our dreams when we awake. It is true that we sometimes feel conscious of having dreamed, without being able to recall any of the imagery of our dreams; because the activity of the mind was so slight, that it did not reproduce vividly the images of which the dream was composed.

We admit that, in the absence of external consciousness, whilst the external senses are inactive, heeding not their appropriate stimuli and conveying no

impression to the brain, the whole of the intellectual powers may be in active operation—that the mind may reflect and reason. It is in such a state of mental abstraction that the philosopher weighs and compares his facts, and on them builds his theories; it is in such a state the poet creates his ideal world and peoples it with “beings which had no corporeal birth;” and it is in such a state the painter forms those images and scenes he afterwards produces on the canvas. But it would be incorrect to call such a state one of sleep in a proper physiological sense. In sleep, we never reason, and the images then formed, if we were to attempt to describe them in verse or transfer them to the canvas, we should find to be, as Dr. Parr remarks, “a thing of shreds and patchwork, composed of the heterogeneous and disjointed vestiges of ideas previously received through our senses.”

We had intended to notice the illustrations of his subject which Dr. F. has drawn from the subject of mesmerism; but we must now pass over this part of the essay, with the sole remark that our belief in the reported wonders wrought by mesmeric influence falls very short of that professed by him. We cannot believe, we have certainly seen no fact calculated to prove to us, that mesmerism, or, as Dr. F. denominates it, *animal magnetism*, “holds a controlling power over both mind and body.”

While we deny that the mind is active during sleep, or that memory has control only over the images derived through the external senses; still we would remark that, admitting the inaccuracy of both these propositions, they but slightly impair the correctness of the views advanced by Dr. F. in reference to the *phenomena* of dreaming, for here it is true that a portion at least of the mental functions are active, while the external senses in common with the organs of animal life are dormant.

D. F. C.

ART. XX.—*Notes of a Recent Visit to several Provincial Asylums for the Insane in France.* By JOHN WEBSTER, M.D., F.R.S., Fellow of the Royal College of Physicians, Consulting Physician of St. George and St. James's Dispensary, &c. London, 1850: pp. 35.

THIS interesting pamphlet is the production of a distinguished member of the medical profession, whose writings are well known in this country, and who has devoted much attention to mental diseases, and been particularly interested in preparing the public mind for a much larger amount of clinical instructions in institutions for the insane than has been heretofore permitted in any part of Great Britain. In the prosecution of this object, he has made several visits to the French hospitals, and in the paper before us, which was originally published in the “*Journal of Psychological Medicine*,” he gives a highly interesting account of his last tour, and a large amount of information, in reference to many of these institutions, not to be found elsewhere in so small a compass. The present report has reference only to eight provincial asylums, while those in Paris, which are most generally known, are referred to only cursorily.

The asylums visited will be briefly referred to. First in order is that of *Bon Sauveur at Caen*, which, besides being an asylum for lunatics of both sexes, is a religious establishment, containing a large population which is thus officially noticed. 1. The choir and lay-sisters, consisting of two hundred and thirty-seven individuals. 2. There are five priests, composed of the superior and four chaplains. 3. Twenty-six free boarders, all resident; twenty being ladies, and six gentlemen. 4. The deaf and dumb, of which there are one hundred and fifty-five, comprising sixty-five males, and ninety females. 5. The resident domestics amount to one hundred and twenty-eight, of whom sixty-eight are males, and sixty females. And lastly, six hundred and ninety-two lunatics, of whom three hundred and two are men, and three hundred and ninety women. Besides these, there are also two physicians, and eighty new resident work people; so that one thousand three hundred and twenty-five individuals actually belong to this great establishment.

St. Meens Asylum near Rennes, with a fine situation, has an old building not constructed for, or adapted to, the purpose for which it is now used. "Even the best part looks more like a prison than a lunatic institution, having strong iron bars in the windows," and in other respects not suitable for the reception of the insane. During the year 1849, ninety-one patients were admitted, thirty-seven were discharged cured, and forty-nine (twenty-one by cholera) died. When visited by Dr. Webster, there were three hundred and eleven patients in the house, of whom one hundred and forty-three were men, and one hundred and sixty-eight women.

Nantes Asylum forms one division of the "Hospice Général" of the city of Nantes, and although the arrangements of the buildings appropriated to the insane are considered admirable by Dr. Webster, one of the best indeed throughout France, he regards the situation as highly objectionable. The total population at the time of his visit comprised one thousand one hundred and ninety-six individuals, viz., 1st. One hundred and ninety insane old men, and two hundred and sixty-five women of the same description. 2d. Twenty-five deaf and dumb persons. 3d. Fourteen male and female boarders. 4th. One hundred and sixty-one orphans or foundlings. And lastly, three hundred and ninety-one lunatics; to which must be added, one hundred and fifty individuals who compose the staff of officers. During the year 1849, one hundred and twenty-six patients were admitted, fifty were discharged cured, and one hundred (sixty-one by cholera) died.

St. Gemmes Asylum, near Angers, is built upon a rock close to the Loire, above three miles from the city of Angers, and is appropriated exclusively to lunatics. When certain improvements now in progress are completed, Dr. Webster believes this "will become a first-rate institution." This asylum differs from the others noticed in having the resident physician the superintending director; and, as might be expected, the discipline pursued was much better than in the establishments having a different organization.

In the asylum were three hundred and forty insane; one hundred and sixty-one being males, and one hundred and seventy-nine females. During the year 1849, one hundred and twenty-six patients were admitted; seventy-one were discharged cured, and seventy (sixty-two by cholera) died.

The *Asylum at Le Mans*, "of all the public establishments for the insane recently visited" by Dr. Webster, "gave him the most satisfaction." This asylum contains two hundred and fifty-eight patients; one hundred and twenty-four males, and one hundred and thirty-four females. During the year 1849, seventy-four patients were admitted, thirty-five were discharged cured, and sixteen (none of cholera) died. This institution has only one physician, who resides within its precincts, and gives his time and exertions solely to the duties of his office.

Asylum at Blois. This institution is not yet completed, but will ultimately accommodate three hundred and fifty insane patients. Its general plan somewhat resembles that at Le Mans. During the year 1849, eighty-six patients were admitted; twenty-three discharged cured, and fifteen ("several" of cholera) died. The actual number in the asylum, when visited by Dr. Webster, were one hundred and twenty-four; sixty being expected to arrive in a short time, and for whom the directors were already prepared. The resident physician is also director, and labour is here used as a remedy to an extent far beyond what is common in other institutions, without any accident having ever occurred.

The *Orleans Asylum* is situated in the city of Orleans, and so surrounded by houses on almost every side that from many of their upper windows conversation can be held with the patients in the court-yards below. It is a part of a general hospital, the entire community being composed of, 1st. Three hundred and ten paupers. 2d. A civil hospital with three hundred patients. 3d. Eighty orphans. 4th. A receptacle for diseased "filles publiques." 5th. The lunatic asylum containing five hundred and twenty-one patients. The total population, including resident official and domestics, amounted to one thousand five hundred and fifty individuals. During the year 1849, one hundred and thirty-seven insane patients were admitted; thirty-one were discharged cured, and ninety-three (thirty-two by cholera) died.

Saint Yon Asylum is near the city of Rouen, the ancient capital of Normandy,

and is reported by Dr. Webster as being not only one of the largest, but also one of the best conducted in France. It contains seven hundred and twenty-nine insane patients, of whom two hundred and sixty-one are males and four hundred and sixty-eight females. During the year 1849, two hundred and four patients were admitted; seventy-six were discharged cured, and one hundred and nine (thirty-three of cholera) died. As seem to be the tendency even when the wards of this institution were most inconveniently crowded.

No one can read this report of Dr. Webster without being struck with the frequent mention made of the noisy and excited state of the female patients, and not less so with the large amount of restraining apparatus now in use in nearly every institution which he visited. In the eight Provincial asylums visited by Dr. Webster, in 1850, and which contained a total insane population of three thousand three hundred and sixty-six, he found one hundred and sixteen under restraint, and of these the proportion of females was considerably greater than of males.

The great progress made in France, within a few years, in reference to the nature, pathology, and treatment of mental diseases, is referred to with commendation, and the regret which we have often felt is fully participated in by Dr. Webster, that of all the regular reports made by the physicians of the various asylums in that country, few if any are printed, but, "like many other public papers, become buried in the archives of the prefectures," the minister's bureau, or consigned to unmerited oblivion in some similar receptacle. It must also be quite obvious, from the details given of the medical staff in most of these institutions, that the physicians who devote their time and talents to these institutions, are not liberally or at all adequately paid for their services, while in not a few there is no proper provision made for the requisite number of medical officers.

Dr. Webster's familiarity with institutions for the insane makes his remarks in reference to the general mode of treatment, and especially in reference to the necessity and effects of restraining apparatus, interesting and valuable. He believes, as we do, and illustrates the truth of his belief from statistical facts, that the frequent use of restraint tends rather to increase than diminish noise, violence, accidents, escapes, and even suicides.

The importance of giving some amount of clinical instruction on insanity is generally recognized, and Dr. Webster's observations lead him to believe that no objection exists to such a course in large pauper institutions, and that no more injury would result to the patients from a class of students passing through the wards of such institutions devoted to the insane, than through those of a female hospital.

The study of mental diseases is obviously too much neglected by medical students in Great Britain no less than in this country, and Dr. Webster, in addition to a very pleasing sketch of his foreign tour, has furnished us with a large mass of valuable facts, and a strong argument in favour of this kind of clinical instruction, which cannot fail to be read with interest by the members of the medical profession.

T. S. K.

ART. XXI.—*A Practical Treatise on Dental Medicine, being a Compendium of Medical Science as connected with the Study of Dental Surgery.* By THOS. E. BOND, A. M., M. D., Professor of Special Pathology and Therapeutics in the Baltimore College of Dental Surgery. Philadelphia, 1851: pp. 324.

AMERICAN dentistry is doing everything which the severest criticism can require to establish its claims to the rank of a distinct speciality of medicine. The number and value of its periodicals; the rapid succession of new standard and elementary works which as journalists we have occasion to notice; and the regular and steady increase of its collegiate foundations, challenge for our brethren in this department of the healing art the highest admiration and praise.

The profession styled itself Dental Surgery, while its pretensions were yet limited almost exclusively to the operative and artistic treatment of its subjects; and the earlier books and publications were chiefly occupied with mechanical and chirurgical remedies and appliances; but enlarging experience and deepening reflection in good time liberalized the science, and discovered its broad and general relations to all the departments into which the healing art has been divided for convenience of study and practice.

This book of Dr. Bond is, we believe, the first work published in which the therapeutics proper of dentistry has been systematically separated from its surgery, and recognized and treated in reference to this distinction. It is, at least, from that side of the subject, and by an author, not a practical dentist, but a public teacher of hygiene, pathology, materia medica, and medical practice in their application to the profession. Dr. Bond is specially qualified for this service, and in the book before us, has performed it happily.

The etiology, symptoms, diagnosis, and nature of disease are treated in as many chapters, upon the received principles of medical science and medical practice, in reference to the special topics of his work, with great clearness and ability. Particularly, there are about fifty pages occupied with the morbid effects of dental disease upon the general system, which make the work of the highest value to the general practitioner, and show how large a service the dental surgeons have already rendered to general medicine both in diagnosis and remedial practice. Indeed the work so well performs its double duty to dentist and physician, that we are at a loss to say which is the more indebted to the author for its publication; nor need we, for both need it, and to both we warmly recommend it. We spoke above of Dr. Bond's separation of the medicine from the surgery of dentistry. This must be qualified a little, for he does not *rigidly* observe the distinction which he so evidently feels, and feels perhaps the more that he is not himself a *surgeon* dentist in the strictness of the title. For ten years he has filled the chair of dental pathology and therapeutics, and now contributes nobly by this publication to the stock of knowledge proper to his department; but he has also given a dozen chapters of his work to diseases and treatment of the teeth and their dependencies, which are strictly *surgical*. We make no objection to this, for there are probably good reasons for embracing these chapters in his plan, and his method involves no confusion; but we respectfully suggest, for the consideration of our author in future editions, that a severely scientific division of the several departments of the profession is the step now required for its advances and growth. Nothing is so necessary in the cultivation of science as correct classification. Mental, like chemical analysis, must separate its subjects into their simple elements, before it can fully comprehend or command them. There is a stage of progress which demands exactitude of system and precision of nomenclature, and dentistry has reached it. We have spoken, or intended to speak, heartily in praise of Dr. Bond's work. It has unmistakeable excellence of thorough medical science in its subject matter, and of capital authorship in its style and treatment, and the suggestions which we take leave to offer to our author in no respect abate our admiration for him or his performance. We would have been glad to find a chapter *distinctly* and *generally* devoted to constitutional irritation, shocks and sympathetic affections connected with diseases of the teeth, extractions and other operations, and such mischiefs as may result from the various modes of filling teeth, shutting up exposed membranes by capping or otherwise, amalgam fillings, &c. &c. The use of chloroform and other anæsthetic agents deserved also, we think, a chapter in a treatise by an author whose position and ability would have given his opinions and instructions so much deserved weight with practicing dentists. Beside these things, which in substance and form concern the interests of dentistry, there is one error which requires correction, for the sake of professional equity and even-handed justice to the living and the dead. In the article upon "amputation of the lower jaw," at page 275, Dr. Bond correctly credits Dr. Mott with the honor of being the first surgeon who amputated the lower jaw at the articulation; but he quotes Dr. Rees, without correction, for the assertion that after Dr. Mott, who operated in 1821, except M. Cusack, of Dublin, the operation was not "performed by any others

until 1842." We have before us "Cooper's First Lines of the Practice of Surgery," in which a detailed statement of the operation, as performed successfully by Dr. Geo. McClellan, of this city, in 1823, is given; accompanied with a handsome engraving of the appearance of the patient before and after the operation, and of the jaw and tumour which were removed.

Dupuytren, as early as 1812, exsected a portion of the under jaw, and Dr. Deadrick, a surgeon of Tennessee, was two years before him in the same bold operation. Originality in surgery, in medicine, is not always easily ascertained, nor is it worth quite all the fighting which it has occasioned; but justice ought to be done as nearly as it can be, in all cases. Some editors and annotators have taken so much pains to depreciate their rivals and cotemporaries, that unsuspecting writers who follow them are sometimes unconsciously made to repeat the injustice which they would not willingly commit. Dr. Bond has been cautious enough to give his authorities for his statements, and so made *them* responsible for their truth. We make room for the following extract from the work which we have been noticing, and give it for its valuable hints to practicing physicians, and as a specimen of our author's style of treating his subject. "That diseased conditions of the teeth and the structures adjacent to them, do exert a most pernicious influence upon the general health, is a fact as well established as any other medical observation; yet the medical profession are, with very few exceptions, entirely unaware of it. We are not apprised that the subject is ever alluded to by lecturers on the practice of physic, when recapitulating to their classes the causes of functional disturbance and constitutional suffering; it is not noticed in the many text-books in practice; and, certainly, however frequently the physician may look into the mouths of his patients, it is very rarely that his comprehensive glance perceives anything worthy of note in the decaying organs of mastication. It is full time that practitioners of medicine should perceive the importance of the teeth and of their diseases; but, until they do so, it is the more important that the dentist should be able to point out the causes of obscure disease, which the physician has in vain endeavoured to discover, simply because he has sought for it everywhere but in the right place. It might be granted, *à priori*, that, if physiological conditions of the teeth, owing to their peculiar position, association, and history, may exercise powerful influence upon the health of other organs, pathological conditions of these same teeth cannot be entirely harmless. Again, if we would examine the structure of a tooth, and perceive how completely its sensitive part is enclosed in an unyielding bony case, we might readily infer, from the consequences of compression in other parts, that the swollen and inflamed pulp, &c., would be exceedingly painful. If, too, we would regard the close connection existing between the teeth, the rapidity with which the flash of sympathetic pain darts along the nervous cords which vitalize them, and the intolerable and protracted suffering which ensues upon even trifling irritation of these sensitive filaments, and remember that pain itself is fully capable of deranging the whole economy, and inducing serious and fatal disorder, we might, without the aid of much reflection, adopt the very rational conclusion that the diseases of the teeth must be of considerable consequence to the entire organization. We might, also, with similar propriety, conclude that the teeth were not made merely for ornament, and that mastication and insalivation are something more than mere forms of introduction to the stomach; that they are important to digestion, which is important to the entireness of organs and the performance of function; and that if mastication, and the insalivation accompanying it, be imperfectly performed, some corresponding imperfection of digestion must result. We might also infer, from the known consequences of long-continued morbid influences, however unimportant in their immediate action, that disturbance of digestion constantly repeated, must, in time, develop evils of a serious character."

E. T.

ART. XXII.—*Address before the American Medical Association, at the Anniversary Meeting in Cincinnati, May 8th, 1850.* By JOHN C. WARREN, M. D., President of the Association. Boston, 1850: 8vo. pp. 65.

THIS address is elevated in tone, and replete with useful information. Such would be expected in any production by its venerable author. The late President of the Association is, indeed, one of the brightest ornaments of our profession at the present day; a distinction to which he is fully entitled not only from his numerous and brilliant achievements as a surgeon, and the important contributions he has made to the improvements of our art, but also from the faithfulness with which he has invariably upheld the dignity and standing of our calling, and the bright example he has set of illustrious character. Arrived now at an age when most men seek repose, he still labours with all the zeal of youth for the advancement of our science, and incessantly occupies himself with laying open to his brethren the rich fruits of his long and ripe experience.

"Standing, as I do," remarks Dr. Warren, "on the verge of professional life, and quitting perhaps the last official station I may be called upon to occupy, I naturally turn back to survey the course I have passed through, with a view to discover whether there is anything in it which may be interesting and profitable to those who are to follow."

Influenced by this noble and liberal sentiment, the author gives us graphic sketches of the eminent men he has met with during his professional career, comprising most of those who have shed lustre on our science during that period, and concludes his address by notices of the principal improvements in Medicine in the latter years of the last half century—the microscope, lithotripsy, tenotomy, cold water, and ether.

We earnestly commend this address to the attention of the profession.

ART. XXIII.—*New Remedies, with Formulæ for their Administration.* By ROBLEY DUNGLISON, M. D., Prof. Inst. Med. &c., in Jeff. Med. Coll. Sixth edition, with extensive additions. Philad., Blanchard & Lea, 1851: 8vo. pp. 755.

THE fact of this work having gone to a sixth edition affords sufficient evidence that it has been acceptable and serviceable to the profession. It indeed comprises a vast amount of highly useful information, compiled from various sources, and most of which is not accessible to the mass of physicians. The present edition has been carefully revised, and largely augmented by the numerous additions made to our therapeutic agents within the period that has elapsed since the publication of the previous edition.

"The last few years," the author remarks, "have been rich in valuable gifts to Therapeutics; and amongst these, ether, chloroform, and other so called anæsthetics, are worthy of special attention. They have been introduced since the appearance of the last edition of the '*New Remedies*.' Other articles have been proposed for the first time, and the experience of observers has added numerous interesting facts to our knowledge of the virtues of remedial agents previously employed. To include all these, it has been necessary to add very greatly to the dimensions of the present edition.

"The therapeutical agents now first admitted into this work, some of which have been newly introduced into pharmacology, and the old agents brought prominently forward with novel applications, and which may consequently be regarded as *New Remedies*, are the following: Adansonia digitata, Benzoate of Ammonia, Valerianate of Bismuth, Sulphate of Cadmium, Chloroform, Colloidion, Cantharidal Colloidion, Cotyledon Umbilicus, Sulphuric Ether, Strong Chloric Ether, Compound Ether, Hura Braziliensis, Iberis Amara, Iodic Acid, Iodide of Chloride of Mercury, Powdered Iron, Citrate of Magnetic Oxide of

Iron, Citrate of Iron and Magnesia, Sulphate of Iron and Alumina, Tannate of Iron, Valerianate of Iron, Nitrate of Lead, Lemon Juice, Citrate of Magnesia, Salts of Manganese, Oleum Cadinum, Arsénite of Quinia, Hydriodate of Iron and Quinia, Sanicula Marilandica, and Sumbul."

It will thus be perceived that the additions to the present edition have not only been numerous, but important, and to increase the practical value of the work to the therapeutical inquirer, the author has added to the index of diseases the particular pages in which the various remedies prescribed in those diseases are referred to.

ART. XXIV.—*On Diseases of Menstruation and Ovarian Inflammation, in connection with Sterility, Pelvic Tumours, and Affections of the Womb.* By EDWARD JOHN TILT, M. D., &c. &c. New York, Saml. S. & Wm. Wood, 1851: 12mo. pp. 286.

WE have so recently recorded our favourable opinion of this work (see No. of this Journal for Oct., 1850, p. 401 *et seq.*) that it will be sufficient, on the present occasion, to announce its reprint in this country, and to recommend it to all who are interested in the subjects of which it treats.

ART. XXV.—*First Principles of Medicine.* By ARCHIBALD BILLING, M. D., A. M., F. R. S., &c. &c. Second American, from the revised and improved fifth London edition. Philad., Lea & Blanchard, 1851: 8vo. pp. 246.

FEW medical works have been received with greater favour than that, the title of which heads this article. It has gone through five editions in England and two in this country, and is now recognized as one of the classics of our professional literature. It is sufficient, under these circumstances, to state that the present edition has been carefully revised by the author, who has profited by the criticisms he has received, and endeavoured to render the work more worthy of the patronage of the profession.

ART. XXVI.—*Review of Chemistry for Students, adapted to the Courses as taught in the principal Medical Schools of the United States.* By JOHN G. MURPHY, M. D. Philadelphia, Lindsay and Blakiston, 1851: 12mo. pp. 328.

THE above work purports to be an aid to the student of medicine in reviewing the subject of chemistry, for the purpose of refreshing the memory in the elementary and important points, and not as a substitute for more elaborate treatises, or as a text-book to accompany a course of lectures on this branch. The author, having experienced the difficulties which meet the medical student under these circumstances, desires to lighten his labour, and offers an abbreviated treatise, comprehending the principal facts in relation to the elementary bodies and their most important compounds. This the author has accomplished in a satisfactory manner, and the student will no doubt find his advantage in embracing the opportunity offered of lessening labour and saving time, especially at periods when the review of all the branches taught in the schools makes this latter a point of considerable importance. In thus noticing favourably the scope of the work and manner of its general execution, it still is necessary to

allude to points of minor importance, which the author, perhaps from want of practice, has allowed to escape his attention. These are principally in the use of symbols, in which no error or difficulty could arise to the advanced student, but it might produce some confusion in the mind of the beginner, by whom this work would perhaps be used as a text-book, although such is not the design of the author. Thus the typographical errors Co_2 , So_2 , So_3 have been allowed to stand for CO_2 , SO_2 , SO_3 , and the symbol Pt. has been adopted without any mark of distinction to express proteine, the same symbol having been previously used to signify platinum. These are, however, so few in number, as not materially to affect the value of the work as a whole, or to detract from the favourable opinion previously expressed of its utility as an assistant, under the circumstances in which it is designed to be used.

R. B.

ART. XXVII.—*The Uses and Abuses of Air; showing its Influence in sustaining Life, and producing Disease; with remarks on the Ventilation of Houses.*

THIS is a very neat duodecimo of about two hundred and fifty pages, prepared for popular use, and published by J. S. Redfield, of New York, in his series of "*Tracts for the People.*" It is filled with interesting and practical information upon the important topics of the relations of food and air to our bodies, and the great advantages resulting from a knowledge of these, in order to secure that greatest earthly desideratum, health. The numerous coloured illustrations, exhibiting apartments with the means of warming and ventilating, add greatly to the value of this excellent little treatise, which deserves the most extensive circulation.

G. E.

ART. XXVIII.—*Consumption of the Lungs, or Decline; the Causes, Symptoms, and Rational Treatment, with the means of Prevention.* By T. H. YEOMAN, M.D. Revised by a Boston Physician. Boston & Cambridge, J. Monroe & Co., 1850: 12mo. pp. 103.

THE nucleus of this small volume was, we are informed by the author in his preface, a series of papers published in 1847 in a London periodical of considerable circulation. The essay comprises a concise but very sensible sketch of the general history, course, and terminations of tubercular phthisis—the habits and conditions of life which tend to develop or to arrest it; together with an account of the treatment that has been found, by experience, most useful for the control of certain of its symptoms, and best adapted to check its onward and fatal course.

There is scarcely anything to be objected to in the views advanced by Dr. Yeoman in reference to either of the points embraced in the present essay. He has not taken up his pen for the purpose of promulgating any novel doctrine as to the nature or cause of the disease—nor to advocate any special mode of treatment or particular remedy for its cure or prevention. He has merely presented a plain, sensible *resumé* of what the results of investigation and experience have taught us in regard to the pathology, etiology, prophylaxis, and management of tubercular phthisis, and as such it may be read with interest, and we are convinced with some profit, by the medical student and junior practitioner. The work, however, is too concise and limited in its details to afford all the information in relation to the important disease of which it treats required by the physician to enable him to arrive at a correct diagnosis in the early stages of phthisis, or to determine upon the proper course of medication or regimen demanded by each particular case that may present itself for his judgment. The treatise was not, in fact, intended for the use of the profession—but for the instruction

of the general reader. We very much doubt, however, whether as a popular work it is calculated to do much good. It is questionable whether the few pre-disposed subjects its sound hygienic precepts may save from the occurrence of an attack of consumption, or the still fewer patients in whom the disease has already developed itself, the very sensible remedial measures laid down by the author, shall guard, for a time, from its rapid progress, will compensate for the actual mischief it is calculated to inflict upon the non-professional reader, by leading him into the vain belief that he can detect, with certainty, in his own person, or in the members of his family, the primary stage of so insidious a disease as pulmonary phthisis—or translate, with sufficient accuracy, the true import of each symptom as it develops itself, so as to resort with safety and effect to the remedies—medical or hygienic—which it calls for. It will be very apt to lead one class of its readers into a fatal security as to their actual freedom from pulmonary tuberculosis, and unnecessarily to alarm another class by inducing in them the belief that they are actually its subjects, when such is not the case.

If to succeed in the practice of medicine—that is, in the proper adaptation of the principles of pathology and therapeutics to individual cases—requires not only that years should be spent in the acquisition of those principles, and their clinical application, but habits of close application, educated with particular reference to diagnosis and the application of remedial agents to arrest the progress of disease, or to control its leading symptoms in the special cases and circumstances under which it may present itself, it must be evident that any attempt to teach, by popular treatises, the domestic management of any disease must necessarily be a failure, if it do not lead, in too many instances, to prejudicial and even fatal results.

D. F. C.

ART. XXIX.—*An Appeal to the Public in behalf of a Hospital for Sick Children.*
London, 1850.

THIS is a very strong appeal, and we trust it will prove to be a successful one, in favour of an institution, the want of which, in any large town, is a glaring deficiency in the list of its medical charities, and must of course be eminently so in so large and densely populated a city as London.

From the investigations of a committee of the Statistical Society, it appears that the whole number of children under 10 years of age, in all the hospitals of London, in Jan. 1843, was only 136, and, of even this small number, 41 had been admitted in consequence of accidental injuries, and 69 for surgical treatment, so that only 26 were suffering from internal diseases. When it is remembered that more than one-third of the whole population of London are cut off during infancy and childhood, it must be manifest that much misery results and many lives are lost for the want of such a charity as the one proposed. Such an institution would not only afford comfort to the poor and prolong their lives, but, by affording the means of instruction to the student, and furnishing opportunities for extending the boundaries of our knowledge concerning a class of diseases, frequent in their occurrence, dangerous in their character, and often very obscure in their symptoms, its benefits would be extended to the highest as well as to the humblest classes of society.

Would our limits permit, we could easily show that the objects desired can only be attained by the foundation of a hospital exclusively devoted to the treatment of children; for the diet, the treatment, the nursing, the hours to be observed, and some of the hygienic requirements, are different from those suited to a hospital for adults.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Weight of the Brain at different periods of Life.*—The *London Journal of Medicine* for February of the present year contains the results of some interesting recent investigations on this subject by THOS. B. PEACOCK, M. D. The author gives the following tables of the average weight of the brain at different ages:—

Average Weight of the Brain at different periods of Life in Males.

Ages.	Numbers weighed.	Average weight.	
		oz.	dr.
1 to 2 years	3	39	7
2 to 3 ..	4	44	1
3 to 5 ..	6	44	13.16
5 to 7 ..	4	45	4.25
7 to 10 ..	6	46	14.33
10 to 15 ..	13	47	15.2
15 to 20 ..	11	49	5
20 to 25 ..	21	50	13.9
25 to 50 ..	123	50	3.8
50 to 90 ..	53	48	9.4

244

Average Weight of the Brain at different periods of Life in Females.

Ages.	Numbers weighed.	Average weight.	
		oz.	dr.
1 to 2 years	3	31	1.3
2 to 3 ..	9	37	5
3 to 5 ..	4	41	0.5
5 to 7 ..	5	41	4
7 to 10 ..	2	40	6
10 to 15 ..	3	40	10.06
15 to 20 ..	18	45	4.1
20 to 25 ..	15	46	1.8
25 to 50 ..	69	45	0.6
50 to 90 ..	23	43	0.3

151

“The extreme range,” Dr. P. observes, “in the weight of the encephalon of the adult male is from 34 oz. to 62 oz. 12 dr., the number of brains weighed having been 197; and in the adult female the range is from 36 oz. 12 dr. to 54 oz., the number weighed having been 107.”

1. The average weight of the encephalon of the adult, as calculated from Dr. Peacock's observations, is, in males, 50 oz. 6 dr.; and in females 44 oz. 7½ dr. Dr. P.'s previous observations* gave an average of 50 oz. 3 dr. for the weight of the encephalon of the adult male, and of 44 oz. 14 dr. for that of the female. A similarly close correspondence will be observed on comparing the respective average weights of the several portions of the brain, as deducted from the two series of observations.

2. The observations now published show, with little exception, an increase of weight in the brain up to the period of adult age, but they are too few to satisfactorily illustrate this point. The tables compiled by Professor Reid,† that drawn up by Dr. Boyd‡ from a very extended series of observations conducted at the St. Marybone Infirmary, and the tables in Dr. P.'s former communication, founded upon the united observations of Dr. Reid and himself, have so conclusively established the fact that the brain does not attain its full development till from twenty to twenty-five years of age, says Dr. P., "that I should not have thought it necessary to insist upon it, had not Sir W. Hamilton§ recently repeated, as fully established, the opinion which he formerly expressed,|| that the Wenzels¶ were correct in stating that the brain attained maturity at or before the age of seven." To illustrate, therefore, the law of development of the brain, Dr. P. has calculated the whole of the observations of Professor Reid and himself.

By these tables it is shown that the average weight of the brain increases up to from twenty to twenty-five years of age.** During middle life, or from twenty-five to fifty years of age, it retains about the same weight, and in after-life it declines considerably. It is true that some exceptions will be found to this rule among the separate observations, but though it occasionally happens that the brain of a young person may be found to equal or exceed in weight the average of adults of the same sex, such exceptions do not frequently occur, and can then only be ascribed to the organ having attained premature maturity, or, most generally, to the mode in which death has occurred. In cases where there is much obstruction to the circulation through the lungs during the last periods of life, the brain is found very much engorged, and though great care be taken to deprive it of the blood, it will still weigh heavier than if death had taken place under different circumstances. Thus it is that the brains of persons who have died shortly after the receipt of extensive burns, or in the collapsed stage of cholera, are found to be unusually heavy. Generally also persons who have died of acute diseases have heavier brains than those who have long suffered from exhausting causes. To obtain, therefore, unexceptionable results, it would be necessary to calculate the average weight of the brain in persons who have died under precisely similar circumstances, and in observations so framed I am satisfied that the exceptions to the general rule would be very rare.

Sir W. Hamilton†† states that he has "established, apart from the proof by averages, that the human encephalon does not increase after the age of seven at the highest. This has been done by measuring the head of the same young person from infancy to adolescence and maturity: for the slight increase in the size of the head after seven (or six) is exhausted by the development to be allowed to the bones, muscles, integuments, and hair." It is, however, evident that this method of investigation can show only the period at which the brain attains its greatest bulk, and not that at which its development is completed; for every practical anatomist is familiar with the fact that the density of the brain varies greatly at different periods of life. Calculations of the average

* Edinburgh Monthly Journal of Medical Science, vol. vii. pp. 101, 166. 1846.

† Edinburgh Monthly Journal, vol. iv. 1843.

‡ Wagner's Physiology, translated by Willis. 1844. Appendix, p. 700.

§ Edinburgh New Philosophical Journal, Jan. to April, 1850, p. 330.

|| Monro's Anatomy of the Brain. 1831.

¶ De penitiori structura cerebri Hominis et Brutorum, p. 267, fol. Tubing. 1812.

** In Dr. Boyd's Table, the weight, both in males and females, is greater at from 30 to 40 years than at any other period of life.

†† Edinburgh New Phil. Journ. January to April 1850

weight of the brain afford the only means by which we can ascertain the period at which its full development is attained, and the changes which it undergoes during the progress of life.

2. *Anatomy of the Subcutaneous Bursæ*.—Mr. WM. COULSON gives (*London Journ. Med.*, Jan. 1851) the following description of the subcutaneous bursæ. These are situated in various parts of the body immediately beneath the integuments, of which they are an appendage. They are connected with, and belong to, the subcutaneous cellular adipose membrane, being in no instance continuous with the deep bursæ, or with the tendons, muscles, or bones, which they protect. The structures composing them are, first, the capsule itself; secondly, certain filaments traversing it; thirdly, folds, or septa, being reduplications of the inner membrane, and these may be either partial or complete; and fourthly, small adipose corpuscular fringes. There is, also, the peculiar fluid secreted by the interior of the sac. In respect of their being shut sacs, intended to facilitate motion and to protect opposing surfaces, and as regards also the fluid they secrete, these bursæ have analogies, no doubt, with the deeper bursæ. In the more perfect synovial capsule of the knee-joint, for example, we not only find a shut sac, but septa forming the alar ligaments; being nearly analogous to the septa of the subcutaneous bursæ. Nor does the analogy stop here, seeing that we find the alar ligament so fully developed in some animals as to divide the knee-joint into two cavities—thus converting it from a unilocular into a bilocular sac: this happens in many of the superficial bursæ. The subcutaneous bursæ vary somewhat in form, and even, perhaps, a little in their structure. In the axilla, for example, where they have, probably, the simplest form, they resemble the cells of a bee-hive piled on each other. In the order of simplicity of structure, those of the groin follow. The mode of formation of these bursæ in the fetal state illustrates, I think, their varieties in the adult. For we find, sometimes, that the cellular tissue, in no way modified, takes the place of a properly developed bursæ; and this is exactly what happens up to the fifth month of foetal life. At other times, in the adult, we find them small, but perfect; showing that their development has been arrested. Even the anconal bursa, viewed by Schreger as the most perfect, has been found, by other anatomists, small, contracted, or scarcely perceptible. Pathological changes also, by altering the condition of these bursæ, reduce them to the tissue, out of which they were formed. Sometimes the interior is filled with a serous fluid, and the walls of the sac are thin, and almost pellucid; at other times they become soft, flaccid, porous, and reticulated, and lose their cohesion—clearly indicating a retrogression to their primitive condition.

The fluid secreted by, and contained within, these subcutaneous bursæ, is held by chemists to be an aqueous solution of albumen, combined with saline matters. The epithelium, common to all true articular synovial membranes, cannot be discovered, even with the aid of the microscope, in the lining membrane of these bursæ.*

It would seem that, prior to the second month of foetal life, these bursæ are open. A remark applicable to the entire system I now describe is that in youth the capsule is thin and pellucid; as age advances, the bursæ become opaque and yellowish. Blood-vessels abound on the exterior of the sac. The inner surface of the dermoid segment resembles a serous membrane; the opposing surface, on the contrary, has a synovial appearance; that is, it is soft, pulpy, and as if covered with glistening elevations. But if these two surfaces differ, as has been alleged by Schreger, their secretions may also differ, giving a more complex character to the fluid than was at first supposed.

The subcutaneous bursa with which surgeons are most familiar is the one situated over the patella. This bursa, which may be called the patellar, is of

* Mr. Toynbee examined for me some fresh fluid, which I removed from a carpal bursa. He says: "The gelatinous matter from the bursa consists of a transparent, viscid, semi-fluid substance, interspersed through which are rounded and ovoid cells, containing granular matter, and having one or two transparent nuclei attached to their inner surface."

a globular, or rather oval shape, the base being usually limited by the extent of the bone. The walls of the sac, in contact in the healthy state, are bedewed by a fluid analogous to what we find in the ordinary cellular tissue of the body, performing, no doubt, the function of synovia; like that fluid, as has been already mentioned, it is an aqueous solution of albumen, combined with saline matters.

The patellar bursa belongs essentially to the superficial or subcutaneous system: it is exterior to the crural aponeurosis; and microscopic research, so much improved and extended of late years, merely confirms the accurate conceptions of Schreger. The epithelium investing the inner surface of the articular synovial membranes is not found in the interior of this or of any other bursa. The peculiar glistening fibres already described are found to stretch across at various points, forming septa or partitions, more or less complete. In many persons, two bursæ, and even three, have been observed developed over one patella, perfectly distinct from each other. This duplication or triplification of the bursæ is not confined to the patellar bursæ, but extends as well to others. My friend Mr. Ireland brought me, some time ago, a patient with a bursa of the size of a marble, situated over the right os magnum, which the patient wished to have removed. I dissected it entire, so that it rolled on the table: in three or four months afterwards, another bursa, as large as the one which had been previously removed, made its appearance in the same situation. Thus may be traced to an imperfect knowledge of the anatomy of these organs the theory of accidental bursæ. When a second bursa appears after the removal of the first, it is simply the enlargement of a second, coeval with the first, and observed then only for the first time by the surgeon.

In the popliteal space, we usually find three subcutaneous bursæ—an external, internal, and middle. The history of these is curious: with similar relations to all the others, they yet present, when enlarged, certain peculiarities. Both surfaces against which the enlarged bursa presses being comparatively soft and yielding, the swelling does not assume the distinct globular form which those situated over bones exhibit. A case of this kind came under my notice a few months ago. A young woman, æt. 32, applied to me, in July last, with a swelling in the right popliteal space, situated principally in the centre of the ham, and of the size of an orange, though more compressed. It was movable, free from any pulsatory movement, and, when firmly pressed, gave an elastic feel to the fingers. The integuments were very little changed in colour, and the swelling was free from pain. I entertained no doubt of its nature, and punctured it by means of a grooved needle, when an ounce and a half of a white gelatinous fluid, much resembling the vitreous humour, escaped; a compress was applied over the part, strips of soap plaster over this, and a bandage tightly over the whole. On removing the pressure at the end of a week, a re-accumulation of the fluid had taken place. The swelling was again punctured, and the fluid, which was much less than on the previous occasion, allowed to escape. The pressure was applied in the same way as before, and removed from time to time. No fresh accumulation took place, and at the end of two months she was quite cured. Schreger has described this bursa, but has given no drawing of it; he does not seem to have met with it in a diseased condition.

There is usually a distinct bursa over each malleolus; but the external malleolar bursa is the one most liable to be enlarged or distended with fluid. At one time it was thought that in club-foot an accidental bursa was formed, to protect the integument at the point of greatest pressure; but this notion has been distinctly refuted. A subcutaneous bursa, occasionally of considerable size, very generally exists over the distal extremity of the metatarsal bone of the great toe, close to the joint, and the term bunion has been applied to it when inflamed or thickened. Subcutaneous bursæ are met with over the trochanter major and tuberosity of the ischium, in the groins, and in connection with the lower part of the superficial fascia of the abdomen.

Bursæ of this kind exist also, as has been already mentioned, in the axillæ, and over the condyles of the humerus. An enlarged bursa over the inner condyle of the humerus came under my notice. C. W., æt. 18, applied to me on the 18th August, with a swelling over and a little above the inner condyle. As

the patient, a few days before, was stooping to raise something heavy from the floor, he first felt pain in the part, and shortly afterwards discovered a slight swelling. At first, it was like a small indurated gland, but it gradually increased to the size of a walnut. It was unattended with pain, and gave, on pressure, an elastic, indistinct fluctuating feel. On the 3d September, I punctured it, and there exuded about a tablespoonful of transparent gelatinous fluid. Firm pressure was applied, and removed from time to time, and the swelling has not returned.

The bursa, which we may call anconal, as situated over the olecranon, is well known, and is often enlarged. There is also one over the distal extremities of the radius and ulna, and one on the carpus, corresponding to the surface of the os magnum, which is often enlarged. A girl, 13 years of age, applied to me on the 7th September, with a swelling like a large marble, which had existed six months, and was situated on the posterior surface of the right carpus, over the os magnum. I punctured it with a grooved needle, evacuated a teaspoonful of white vitreous-looking fluid. Pressure was applied over the part, and renewed every week for three times. The patient is now quite well.

That bursæ in this situation may sometimes acquire considerable size is shown by the following case. E. F., æt. 30, applied to me on November 15th, on account of a large bursa over the os magnum, and a little to the radial side of it. About eight years ago, it first arose, from her husband pressing this part of her hand very hard with his knuckles—to use her own expression, by “his knuckling her.” Immediately after this, a swelling commenced, and at the end of a twelvemonth it had attained the size of a walnut. It was then punctured, and near two teaspoonfuls of fluid were evacuated. No pressure was applied; the swelling disappeared until two years ago, since which time it gradually increased, till it reached the present size. The swelling prevented her from turning her hand back, and from wringing clothes. There was a great feeling of weakness in the joint, and occasional pain in and about the swelling, especially after exertion. On November 18th, I punctured it with a needle. As the case is still under treatment, I am unable to give the result: I feel no doubt, however, of its permanent dispersion.

There is a large bursa over the first joint of the thumb, and others, often double, over the first and second joints of the fingers. That bursæ exist in other parts of the body, I have no reason to doubt; one is not unfrequently found under the integuments, at the angle of the jaw; and others, extremely minute, and rarely demonstrable, are said to exist under the integuments of the back, corresponding to the spinous processes of the fifth, sixth, and seventh cervical vertebræ. More extended pathological inquiries may enable us still to discover others; for it is by their accidental enlargement that the presence of some of them has become known to surgeons.

3. *On the Round Ligament of the Uterus.* By G. RAINEY, Esq.—Speaking of the difference between the striated and non-striated varieties of muscular fibre, Mr. Rainey denies that the round ligaments are composed of the latter; and affirms, on the contrary, that they are composed of the striated or voluntary fibre. This opinion he supports on the following grounds—first, that the round ligament arises from three tendinous and muscular fasciculi; one from the tendon of the internal oblique, a centre one from the upper column of the external abdominal ring, the third from the inferior column of the same. These uniting form a round end, which expands upon the angle of the uterus. The striped fibres chiefly occupy the centre of the cord, but as they approach the uterus they lose this character, and assume that of the dartos muscle.

Mr. Rainey further states that the round ligaments do not, as was supposed, emerge from the external ring to be inserted upon the mons veneris; and that their use is in some manner connected with the act of coition.

In the same essay, the author investigates the changes which the uterus undergoes during gestation. He regards the increase in size to depend upon the development of the embryonic nucleated fibres of the unimpregnated uterus, which receive a new impulse on the reception of the ovum. After parturition, he supposes the fully developed fibres to be absorbed and replaced by fresh embryonic ones.—*Philosophical Transactions.*

4. *New Muscles of the Urethra.* By H. HANCOCK, Esq.—A great deal has been said and written upon the subject of spasmodic stricture and strictures in general; but I am not aware of any one having hitherto satisfactorily accounted for the several phenomena displayed in the various forms of impediments to the passage of urine which are usually described as spasmodic stricture. Some have ascribed them to inflammation; others to engorgement of the net-work of vessels surrounding the prostate; others, and the larger number, to morbid and irregular contraction of the muscles surrounding the membranous portion of the urethra, viz., Wilson's, Guthrie's, and Santorini's muscles, together with that usually denominated the "accelerator urinæ muscle." I have always considered these explanations unsatisfactory, and totally inadequate to account for the difficulties I have encountered in the treatment of urethral diseases. I have been unable to understand how voluntary muscles should continue in forced and excessive action so long as spasmodic retention of urine has been known to exist. I have been unable to account for the muscles just named causing spasmodic closure at parts of the urethra which they do not invest. I could not account for the almost complete retention of urine in cases where no impediment presented to the passage of instruments of large size; neither, by the reasons usually assigned, could I account for the sudden contractions of the urethra so frequently met with, and which could only be ascribed to the more general presence of muscular stricture than has hitherto been considered to obtain in these parts. Assisted by my friend Mr. Hogg, to whom I am greatly indebted, I have lately paid great attention to this subject; and I beg to submit to the society the results of our investigations. Sir E. Home, and various other surgeons, have described the urethra as muscular; but in this they were in error. The urethra itself consists of mucous membrane, lined by its epithelial scales, but it is closely invested by muscular fibres of organic structure similar to, and in fact continuous with, the muscular coat of the bladder. The muscular coat of the bladder appears to me to consist of two layers of involuntary muscular fibres, an internal and an external; the external, partly covered by peritoneum, passes forwards and extends over the outside of the prostate gland; the internal, on the contrary, separated from the mucous lining of the bladder by cellular tissue, accompanies the mucous lining when it becomes urethra, through the prostate gland, forming an involuntary muscular covering to the urethra in its passage through the gland. The membranous portion of the urethra is next closely invested by a continuation of these muscular fibres, which cannot be mistaken for any portion of Wilson's, Guthrie's, or Santorini's muscles, as the latter are voluntary, and present the usual striated appearance when viewed by the microscope, whilst the former are strictly involuntary and nucleated. Conducted forwards upon the membranous portion, they reach the bulb, and here they divide into two portions, a superior and an inferior; the superior continues onward to the orifice of the urethra, lying between the urethra and corpus spongiosum; the inferior passes on the outer surface of the corpus spongiosum, separating it from its fibrous investment, to which the fibres adhere pretty closely; these latter are also continued forward to the orifice of the urethra, and in their course they invest the spongy portion of the bulb; the urethra and the glans penis entering very largely into the formation of that peculiar structure found at the orifice of the urethra, and which appears to consist almost entirely of involuntary muscle and elastic cellular tissue, constituting an additional sphincter muscle to those already described as existing in various parts of the body. It will thus be seen that the corpus spongiosum urethræ lies between two layers of involuntary muscle, the one separating it from the urethra, the other from its fibrous covering, an arrangement, doubtless, exerting great influence upon the expulsion of the blood from the spongy tissue, when erection of the organ is no longer required, as well as upon the acceleration of the passage of the urine along the urethra; and I am doubtful whether the hitherto named accelerator urinæ muscles may not with more propriety be considered a depressor penis, or a direct opponent to the erectores penis. I have thought it right to make this short communication to the Society, as the now proved existence of a muscular and continuous muscular coat to the very orifice of the urethra may tend, in a great measure, to

explain the anomalies met with in the various cases of stricture, and may also be the means of introducing an improved means of treatment. I am still continuing the investigation of this subject; and, should the Society desire it, I shall be happy to bring it forward in a more detailed form at some future period.—*Report of Proceedings of Medical Society of London, in Med. Times, 22d Feb. 1851.*

5. *Fistula of Stomach.*—Dr. ROBERTSON gave to the Medico-Chirurgical Society a short sketch of the history of a patient at present under his care in the Infirmary, in whom a communication between the stomach and external surface of the abdomen had existed for several years. The perforation had resulted from internal causes, and the present condition of the patient encouraged the hope that a series of experiments upon the digestive process might be undertaken without prejudice to the woman's health. Dr. Christison, Dr. Spittal, Dr. MacLagan, and Dr. Simpson made some observations on the case, and a committee was named to make the necessary investigations on the subject. The committee consists of the President, Dr. Christison, Dr. Bennett, Dr. Douglas MacLagan, Mr. Goodsir, and Dr. W. Robertson.—*Monthly Journ., Jan. 1851.*

6. *Researches to prove the Non-vascularity of certain Animal Tissues.*—The following conclusions are given by Mr. TOYNBEE as embodying the results of his investigations:—

1. The articular cartilage of joints in a healthy state contains no blood-vessels, and that it is nourished by the vessels which surround it; in certain diseases of the joints, these vessels are prolonged into the substance of articular cartilage.

2. The fibro-cartilages of the joints and of the spine, when healthy, contain blood-vessels only at their circumference; in disease they become vascular.

3. That the following structures of the eye—viz., the cornea, the crystalline lens, and the vitreous humour possess no blood-vessels in a healthy state; in some diseases of the eye the cornea becomes vascular.

4. The epidermis of the skin, teeth, nails, feathers, and the hoofs of animals have no blood-vessels. The hoof of the horse is pervaded by numerous fine canals which circulate a fluid throughout the whole of the substance, and give to it the elasticity so essential to the due performance of its functions.

The author states that his object has been to establish as a law in animal physiology, *that organs are capable of being nourished, and of increasing in size, without the presence of blood-vessels in their substance.*

The application of the above-named law to the study of *surgery*, in reference to the causes of the extension of vessels into the extra-vascular tissues of the eye and the joints, when in a diseased state, and to the measures to be adopted for the prevention and cure of those affections which are dependent thereon, and to *pathology*, in the investigation of the nature of morbid structures, particularly of those classes which contain no blood-vessels, will, the author feels certain, be productive of scientific interest and of practical advantage.—*Philos. Trans.* 1841.

7. *On the Absorption of Alimentary Substances, and the Functions of the Lacteals.*—M. BERNARD read a memoir on this subject before the Academy of Sciences, Paris, in which he proposed to determine, by direct experiment, the nature of the nutritive principles which are absorbed and conveyed by the chyliferous vessels, in order to ascertain if there really exist any alimentary substances which absolutely escape venous absorption, and consequently avoid passing through the liver before arriving at the lungs.

Alimentary substances submitted to digestion are, in the intestinal canal, finally reduced to three principal substances—the saccharine, the albuminous, and the fatty emulsive; on these M. Bernard has instituted experiments:—

1. *With regard to the absorption of Sugar by the lacteals.*—On injecting large quantities of sugar into the stomachs of different mammiferæ, it has been found in the blood of the portal vein, while it was absent from the chyle of the thoracic duct at the same time and under the same circumstances; whence

it is concluded that sugar, before arriving at the lungs, traverses the liver, where it undergoes a peculiar physiological modification. If a solution of grape sugar be injected into the superficial veins of a dog, it speedily passes off by the urine; on the contrary, if the solution of sugar be injected into the radicles of the portal vein, the sugar is no longer eliminated by the kidneys, but passes into the circulation, and is assimilated in the same manner as if taken into the digestive canal. Thus it is shown that the absorption of sugar by the portal system is a condition essential to its assimilation, since, if confined to the lacteals, the saccharine principle is abstracted from the influence of the liver, and is diverted directly into the general venous circulation, as takes place when it is injected by the jugular vein.

2d. *As to the absorption of Albumen by the Lacteals.*—Albumen injected into the general venous circulation soon appeared in the urine. If injected into the portal vein, it does not then appear in the urine, but is assimilated in the same manner as obtains with sugar.

3d. *Absorption of Fat.*—M. Bernard's previous researches have shown that fatty matters are not capable of admission into the lacteals, until an emulsion has been formed by the action of the pancreatic juice. Immediately that this emulsion has penetrated the lacteals, their aspect undergoes an entire change; instead of remaining transparent, like other lymphatics of other parts of the body, they assume a milk-white appearance, and owing to the transparency of the coats of these vessels, the course of the fatty matter may be followed from the intestine to the left subclavian vein, where it is diverted into the thoracic duct. It is not necessary that fatty matters should traverse the liver in order to their assimilation. M. Bernard has injected fatty emulsions into the jugular vein, but has not found that substance in the urine.

Thus the products of digestion may be distinguished with reference to absorption into two groups: *e. g.* 1st, fatty and albuminous matter absorbed by the lacteals, passing into the general circulation without having traversed the liver. The last proposition cannot be taken in so absolute a sense as the former, since experiment and microscopical examination demonstrate that fatty matters are absorbed both by the portal system and by the lacteals.—*London Medical Gazette*, January, 1851.

MATERIA MEDICA AND PHARMACY.

8. *Evil Effects following the Incautious Administration of Chloroform.*—Dr. BAGOT stated to the Surgical Society of Ireland, December 7, 1850, that a few months previously he had been sent for, at about half past ten P. M., to see a young lady to whom chloroform had been administered, at twelve o'clock that day, for neuralgic pains of the face arising from carious teeth. She was a healthy dark-complexioned woman, and had, he understood, great repugnance to the inhalation of chloroform, to which she submitted but as a last resource, after having exhausted every other available means of ridding herself of those very distressing pains. From inquiries, he judged that from a drachm and a half to two drachms had been administered before anæsthesia had been produced. At the period of Dr. B.'s visit, ten hours and a half after the administration of the chloroform, the symptoms under which she laboured were those of coma. She was lying on her left side, perfectly unconscious of all around her, her eyelids closed; on raising the lids, the eyeballs appeared much suffused, the pupils irregular, and scarcely acted upon by light. There was considerable congestion about her face, and her head felt hot; surface of the body and legs cold; pulse 90, thready, irregular, and intermittent. Up to seven o'clock her friends had not found much difficulty in arousing her, although she soon relapsed into the same state. Since that hour it had been much more difficult to dispel the stupor, and it was after many endeavours that Dr. B. was able to do so. When roused, however, she intelligently answered a question, but after some hesitation, as if endeavouring to collect her thoughts. She then almost immediately sank into the same comatose state, having first expressed herself to the

effect that she knew that she was dying. Two or three times during the day she had shown hysterical symptoms, crying when moved, and having the same thought of approaching dissolution before her mind. Her bowels (habitually confined) had not been moved for three days. The apothecary, by whom this very powerful agent had been administered, visited her more than once through the day, as also in the evening, but did not take any step towards recovering the patient from the very urgent symptoms under which she was evidently fast sinking.

The general features of Dr. B.'s treatment consisted in the admission of fresh air, strong carbonate of ammonia to her nose, an occasional sprinkle of cold water over the face, stupes of hot water, containing an abundance of mustard, to the feet and legs. As soon as she was able to swallow, draughts of ether and aromatic spirits of ammonia were given her, and in about two hours, when the urgent symptoms were relieved, and some reaction had set in, strong tea was administered, which seemed very grateful, and by which she was much benefited. Previous to leaving her for the night, Dr. B. prescribed a draught containing one drop of croton oil, which affected her bowels in seven hours.

It is worthy of remark that, as she recovered the effects of the chloroform, the neuralgic pains returned to her face with great violence.

At Dr. B.'s visit next morning, she informed him that she had passed a wakeful night, and had suffered much from headache, which was confined to the right temple. This pain continuing through the day, two leeches were applied to her temple, from which she derived immediate relief, and was enabled for the first time to turn off her left side. She was much reduced in strength by this illness, and fainted at her first attempt to sit up in bed, where she was obliged to remain some days.—*Dublin Medical Press*, December 25, 1850.

9. *Effects of Chlorinated Hydrochloric Ether on Animals.*—M. FLOURENS read a note to the Academy of Sciences, January 13, in which he stated that he had found this agent to produce a powerful effect upon various animals. Dogs were placed under its full effect in about three or four minutes; all sensibility was completely destroyed, without any impairment of movement. Injected into the crural artery of a dog, both motion and sensation of the posterior extremities were lost, tetanic rigidity being produced. The effects observed were similar to those produced by chloroform and the essential oils; while the ordinary ethers, the fixed oils, naphtha, ammonia, and camphor, produced paralysis, with relaxation of the muscles, when injected by the arteries. The separation of the action of the nerve and of the muscle is thus effected, and a means of physiological analysis is furnished by the use of this ethereal compound.—*London Medical Gazette*, January, 1851.

10. *On the Inhalation of various Medicinal Substances.*—Dr. SNOW recently read a paper on this subject before the Medical Society of London.

He said that, previously to the discovery of etherization, medicines had rarely been inhaled, except with a view to their local action; but that there was no more reason to limit inhalation to pulmonary diseases than to restrict the exhibition of medicines by deglutition to affections of the stomach and bowels. He admitted, however, that the proper administration of medicines by inhalation was attended with much greater difficulties than their exhibition in the usual way. The chief object of his communication was to point out the manner in which certain medicines could be inhaled. According to their different physical properties, they might be inhaled either with or without the aid of heat; when heat was employed, they might be inhaled either in the dry way, or with the vapour of water.* The fumes expelled by heat from the extracts of opium, stramonium, and aconite were inhaled dry. Ammoniacum and other gum resins could be inhaled either in the same way, or with the vapour of water. Turpentine, creasote, camphor, iodine, and benzoic acid had been conveniently inhaled along with watery vapour, by placing the dose of medicine to be used in about half an ounce of water, which was heated by the

* See *Medical Times*, December 7, 1850.

flame of a spirit-lamp. Several of these medicines had also been inhaled at the ordinary temperature of the air, without vapour of water, as also had ammonia, hydrocyanic acid, and chlorine. For drawing nitrate of silver into the larynx in the form of powder, the bowl of a pipe, with a glass tube fitted into it, was used. A grain of nitrate of silver, finely powdered with five grains of loaf sugar, was inhaled, by a strong inspiration, once a day. The sugar was recommended by a French author for diluting the agent, and had an advantage over lycopodium powder and similar substances, which, not being soluble in the mucus of the air passages, caused irritation.

At the hospital for consumption at Brompton, the physicians to which institution had invited Dr. Snow to assist in contriving and superintending the inhalation of medicines, opium had been inhaled by a considerable number of phthisical patients generally with marked benefit. Relief had also been obtained from several other medicines; but the inhalation of iodine and chlorine had apparently not been attended with any advantage. It might not be uninteresting to mention that, whilst four patients were inhaling chlorine twice a day, in the summer of 1849, two of them were attacked with cholera, they being the only patients in the hospital that were attacked with it at the time. As chlorine can be smelt exhaling in the breath for hours after the patient has inhaled it, he thought that this occurrence was opposed to the hypothesis that the diffusion of chlorine in the air had the power of limiting or preventing the spread of cholera. It was not his intention to treat of the inhalation of chloroform on the present occasion; but, having been speaking of pulmonary affections, he might state that he had never seen chloroform fail to relieve an attack of spasmodic asthma in any case in which it had been inhaled.—*Medical Times*, January 25, 1851.

11. *On the Physiological Effects of Picrotoxine, or the Active Principle of Cocculus Indicus*.—A paper on this subject was communicated to the Medical Society of London by Dr. ROUTH.

The deduction from a number of experiments upon the different classes of vertebrate animals was, that picrotoxine produced symptoms very nearly analogous to those attendant upon hydrophobia.

EXP. 1.—A dose of 20 grains of picrotoxine was given to a dog. After 20 minutes it produced salivation, tremors, succeeded by opisthotonos, convulsions, and great difficulty of breathing, recovery taking place.

EXP. 2.—Thirty grains inserted under the skin of the axilla of a dog. Similar symptoms were produced, and in addition, bloody stools and urine. In three days the dog recovered.

EXP. 3.—40 grains were given to a dog. Retrograde and gyratory movements were produced. Tetanus killed the animal. Post-mortem examination displayed the brain in a state of congestion, particularly at its base, and having much bloody serum in the ventricles. The muscular irritability was destroyed.

EXP. 4.—60, 120, and 100 grains were successively introduced under the skin of a donkey. The two first doses not producing much effect, the third was given, which speedily induced salivation. The animal pawed the ground with his fore feet, ran backwards, and died in a tetanic condition.

EXP. 5.—10 grains were inserted under the skin of a rabbit. In 59 minutes the animal died.

EXP. 6.—4 grains in the axilla killed a pigeon.

EXP. 7.—5 grains given to a frog produced no effect until the expiration of fifteen minutes, at which time he was attacked with opisthotonos.

EXP. 8.—5 grains were thrown into the water in which a gold-fish was placed. The animal became much excited, and leaped from the water two or three times.

The author drew attention to the circumstance of the effects of the poison simulating those produced by the gradual removal of the cerebellum and corpora quadrigemina, and to the fact of an increase in the animal temperature. No coma occurred in any of the above cases.—*London Medical Gazette*, January, 1851.

12. *On Iodognosis*.—M. DORVAULT has published a series of researches on the chemical, therapeutical, and medical properties of iodine. To these, as embracing the entire knowledge of all the properties of that substance, he has given the name of *iodognosis*, *iodognosie* (from *ἰώδης* and *γνώσις*).

We here submit an abstract of the medical portion of these researches, from the *Gazette Médicale de Paris*:—

Iodine, as a therapeutic agent, according to M. Dorvault, is unimportant; it is to its combination as *iodides* that its medical value is due. Even when introduced alone into the system, its therapeutic effects are to be attributed to its combination with the alkalis which exist in the fluids of the body. Under either circumstances the terms *iodic medication* express the same fact. Iodide of potassium is taken by M. Dorvault as the type of iodides.

Physiological Action of Iodides.—Iodides belong to that class of therapeutic agents to which M. Dorvault gives the name of *chemico-catalytic*, and form its most striking representative. This proposition is founded on the following facts: If the animal fluids (blood, lymph, semen, milk), or their proteic elements (albumen, fibrin, casein), be subjected to the action of a solution of iodide of potassium, it will be seen to prevent their coagulation and dissolve them. In producing this effect the salt remains unaltered; it acts, therefore, by virtue of what chemists have called the *catalytic* force. The same may be shown to have obtained when employed in certain pathological cases. The salt may be detected unaltered in the blood or urine, or other secretions.

These facts have been observed by many other investigators, and all have found practically that iodide of potassium promotes secretion, increases the functions of the mucous glands of the alimentary canal, and of the liver, kidneys, skin, pancreas, parotid, &c.

Iodide of potassium is rapidly eliminated from the animal fluids. Dr. Scharlan (of Stettin) found that a patient, to whom he gave 53 grammes daily, eliminated 51 grains by his urine. The five grains lost were accounted for by the elimination of this salt by the saliva, sweat, and tears. Dr. Kramer satisfied himself, from his experiments, that six days sufficed for the complete elimination of this salt after its exhibition during 50 days. The researches of Dr. Marchal, at Vâl de Grace, also prove the rapid passage of iodide of potassium by the urine.

Iodine introduced into the system has been separated by the action of alkalis on the blood.

Special Action of Iodides.—The accidental or consecutive action of iodides has often been mistaken for their primary or efficient action. Some physiologists have considered iodine as a stimulant, others as a contra-stimulant. M. Dorvault observes that neither view expresses the exact truth. He admits a certain degree of general constitutional excitement under its employment; also that, in severe pains of the bones and other tumours, the action of iodine is sedative, by allaying pain. But in both these cases the stimulation and the sedative action are the consequence, not the cause, of the beneficial therapeutic agency of the remedy.

A third opinion, that iodine is alterative, M. Dorvault regards as nearer the true explanation, but as insufficient in fact, as the medicinal influence of the iodides is often seen after the first dose, therein differing from alteratives. M. Dorvault admits, however, the alterative action of some substances in which iodine exists in minute quantities,—*e. g.*, sponge, cod-liver oil, &c.

M. Dorvault also considers the purely chemical theory of the action of iodine as incorrect; his own opinion being, that the medicinal virtue of the iodides consists in their power of dissolving or further liquefying the *humours* of animal bodies, of separating their constituent or proteic elements, and disposing these to the formation of new products, such as coagula, false membranes, and pathological concretions: that the iodine and the potassium united both concur in the production of this result, by a special and peculiar chemico-physiological power which iodides possess of liquefying the fibrine of the blood without destroying the globules; while potash, ammonia, and other substances, dissolve the blood in all its parts.

Therapeutic Action of Iodine. The pathological states in which it is employed.—Goitre, scrofula, syphilis, skin diseases, white swelling, caries of the vertebræ, tabes mesenterica, rickets, phthisis, leucorrhœa, amenorrhœa, and chlorosis, cancer, cachexies, dropsy, poisoning, tumours, rheumatism, various chronic diseases, hypertrophy. These are the forms of disease in which, M. Dorvault observes, the administration of iodine is indicated.—*London Medical Gazette*, January, 1851.

13. *New preparation of Phosphate of Iron.*—Dr. ROUTH recently exhibited to the Medical Society of London two specimens of phosphate of iron dissolved in metabasic phosphoric acid—one in a solid, the other in a fluid state. The compound was prepared by adding as much phosphate of iron as the metabasic phosphoric acid in a boiling state would take up, and allowing it to cool. The proportions would be found, as nearly as possible, two of acid to one of the phosphate. The solution obtained is of a semi-transparent, greenish or slaty hue. If exposed to the air for a day, it hardened; but mixed with liquorice powder or flour, it could be made up at once into pills. The compound was soluble in any proportion of water, and free from any nauseous, inky taste. Dr. Routh had not analyzed it, and could not assert whether it was simply a solution of the phosphate in the acid, or a new superphosphate that was formed. He had given it largely. It appeared to him to be better adapted for and more speedy in bringing about a cure, than other preparations of iron, in some cases of anæmia and debility, brought on by venereal or other excesses, overstudy, and other depressing diseases; in each there was a prevalence of nervous symptoms, and a large quantity of phosphates voided by the urine. It seemed to act on the same principle as cod-liver oil, i. e., as the latter might be considered to supply the amount of carbon necessary for combustion directly to the lungs, thereby checking the drain upon the system, and allowing it to rally from its hectic state; so he supposed the present remedy supplied directly to the brain the amount of phosphorus necessary, to the undue diminution of which the nervous disorder was probably owing. The medicine did not gripe or constipate. He gave it in doses of j or ij grains three times a day.—*Medical Times*, January 25, 1851.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

14. *The Chemistry of Tubercle and the Special Pathological Anatomy of Tuberculosis.*—HENRY ANCELL, Esq., in his interesting lectures on Blood diseases, now in course of publication in the *Medical Times*, makes the following interesting remarks on the chemistry of tubercle, and the special pathological anatomy of tuberculosis:—

“The history of tubercle comprised in my two former lectures contains indubitable proof that this anatomical element of disease is a substance *sui generis*. Its physical, microscopical, and chemical characters show that it differs from every educt or product of nutrition or healthy secretion or excretion, and from all the educts or products, structural or amorphous, of ordinary inflammation. It differs from every other morbid product, non-malignant, malignant, or parasitical. It is essentially neither serum, pus, coagulable lymph, albumen, fibrine, nor any particular texture. At the same time, it is manifestly derived from the blood in an unhealthy condition, and the characters of the product and those of the morbid blood have certain relations which indicate very satisfactorily that the one depends upon the other. The morbid liquor sanguinis, and the deficient and perhaps structurally defective red corpuscles of the blood, are the analogues of the amorphous stroma and defective cells of tubercle; the vitiated albuminous constituent of the plasma is probably the analogue of the caseous constituent of tubercle and even of tuberculous and scrofulous pus; the low vitality of the blood indicated in my diagram is the analogue of the comparatively inorganic quality of the tuberculous product and of the very low degree

of organization which it presents. Organic chemistry has taught us thus much; it remains for new researches to develop the essential character both of the morbid condition of the blood and of its product the liquor tuberculi; the discovery of the one will necessarily comprise that of the other. When treating of the general pathology or theory of the disease, the views which have been entertained of its nature will come under consideration. In the mean time, the analyses recorded in the last lecture suggest a few remarks, and the anatomico-pathological facts connected with the diseased state of the blood and the deposit of tubercle, require to be detailed, since no theory can prove satisfactory which is not consistent with these facts.

"As respects the chemistry. In the first place, although variable, there is a much nearer approach to uniformity in the results than might have been expected. We have to bear in mind the very variable circumstances under which tubercle is deposited in the tissues, and collected by the chemist for examination. Its composition undoubtedly varies according to the length of time it has been deposited and the stage of its development. If we were to admit that it is a definite chemical compound, which is very probable, but by no means proved, and is perhaps incapable of proof or disproof, still this compound must be subject to changes and to admixture with numerous materials, as with those composing the tissues, which, by pressure and otherwise, become disintegrated and blended with the essential constituents of tubercle, or with the products of inflammation, as pus or lymph, from inflammation of the parenchymatous structure of an organ, or with mucus and pus from the mucous membranes, or with blood itself. It is always difficult, and frequently impossible, for the chemist to separate these different products, or to estimate their proportions. Tubercle must also, from the same causes, exhibit differences according to the nature of the tissue in which it is deposited.

"Chemical analysis leaves no doubt that tubercle contains a protein compound as an essential constituent, which appears to bear a close analogy to, if it be not identically, casein. This fact is confirmatory, if not demonstrative, of the view taken throughout these lectures, that it is a secretion from the blood, for all the facts of science contradict the notion, that protein compounds are formed in any of the animal tissues, or are derived by those tissues from any other source than the blood. The caseous quality of tubercle and scrofulous pus indicates the presence of casein in the liquor tuberculi, showing that from the liquor sanguinis of tuberculous blood a caseous blastema is exuded, differing, as respects its caseous quality, from the ordinary healthy blastema. Its caseous quality renders it unfit to nourish the tissues, and gives it a tendency to solidification.

"The existence of pyine, regarded as a tritoxide of protein, detected in particular specimens by various chemists, does not, in my mind, invalidate that of casein. It is manifestly by no means a constant constituent. The question will at once arise, whether a peculiar substance may not be the result of inflammatory action on tuberculous blood resulting in the superoxidation of the protein compounds. In this point of view, pyine would be regarded as an inflammatory product superadded to the essential constituent of tubercle; but the chemistry of the phases and complications of tuberculous development is at present so imperfect, that it is scarcely safe to venture even a conjecture upon such a point.

"One of the most interesting facts in connection with the chemistry of tubercle, is the existence of a large proportion of fatty matter. This is the result of a majority of the analyses, and Rokitsanski, Gulliver, and Scherer affirm that this constituent increases from the time that tubercle loses its transparency and as the softening process proceeds.

"A most curious fact also was discovered by M. Guillot, which, if corroborated, might ultimately assist us in arriving at a knowledge of the essential nature of tuberculosis. M. Guillot has ascertained experimentally, that the dried parenchyma of those portions of the lung which in phthisis, as also in pneumonia, have become impermeable to the air, contains a very large proportion of fat. In phthisis as much as 40 and even 52 per cent. of fat is said to have been detected in the desiccated tissue of the diseased part of the lung. It further ap-

pears, that the proportion of fat in the dried parenchyma of the foetal lung is diminished, after respiration becomes established, from the proportion of ten or 18 per cent. to 6 per cent., and that in all diseases wherein a portion of lung loses its functional powers, an accumulation of fat takes place in that portion.

"Two explanations have been suggested of this increase of fatty matter in tuberculous or non-respirable lung. It has been held, that the materials of respiration being to a certain extent converted into fatty matter in the blood, preparatory to eremacausis, and this eremacausis taking place in part during the passage of the blood through the lungs, an accumulation of fat takes place in consequence of the lung having ceased to perform its function. It has on the other hand been held that tuberculous matter is essentially composed of a large proportion of fat. According to the latter view, the nature of tuberculosis is diametrically opposite to that suggested by some authors—it is a fatty degeneration.* These facts have to be associated with the frequency of a fatty condition of the liver in tuberculosis, as observed by Louis and others, although other results were obtained by the experiments of Regnaud; and with the effects of cod-liver oil in the treatment of tuberculosis. The whole must be comprised in the consideration of the essential nature and theory of the disease. The excess of fatty matter in tubercle is taken by Dr. Madden to imply a retrograde morphology, and this accords with the views of Dr. Addison, to which I have already adverted.

"Tubercle appears also to contain a great excess of extractives, and, as compared with other proteiniform products, an excess of water. These and its other qualities associate the tuberculous deposit with the vitiated state of the liquor sanguinis, which I formerly described as an essential character of tuberculous blood.

"The analysis of cretaceous masses is one of the most interesting, not to say important, parts of the subject. The uniformity of the results, and the analogy to bone-earth and bone, will strike every one. Moreover, it appears that, after the process of softening, if the tendency of the constitutional and local affection is to quiescence and health, and even before softening, if that tendency exist, the aqueous parts of tubercle must be absorbed. Where this tendency to health and restoration occurs, the analyses also prove another most important fact; the crude tuberculous matter which, in its original state, is probably incapable of resorption, must undergo transformations by which it is rendered susceptible of that process. It is only necessary to consider the large proportion of earthy material which remains in cretaceous tubercles, if these cretaceous masses are justly regarded as the remains of tuberculization, in order to admit this. The quantity of earthy matter aggregated in these masses is a most significant fact. Crude tubercle contains but a very small proportion of earthy salts—say one per cent.—whereas these masses frequently contain ten, twenty, and thirty grains. The deposition and resorption of animal matter, leaving earthy particles behind, must have taken place to a very great extent, or for a very considerable period. It appears to me, that where the tendency to cretaceous aggregation has existed in the highest degree, the blood must have wholly or partially lost its tuberculous quality; and that, after having secreted intractable tubercle, owing to this favourable change it pours out a blastema, which, after depositing its earthy salts, is susceptible of resorption, and is actually absorbed, the earthy particles gradually accumulating in the tuberculous cavity. That some such process as this occurs follows from a consideration of the whole series of chemical facts.

"The ultimate analyses and their reduction into formulæ have been regarded by some rather as matter of amusement than of utility. I cannot adopt that view. Whatever the defects of organic chemistry at the present moment, I believe it is gradually elevating medicine into a demonstrative science; and I think it is incumbent on us to regard discovered facts in every point of view. Scherer finds, in one point of view, an excess of carbon and hydrogen in tubercle from the liver as compared with that from the lung; and he thinks this may arise from the deposit in the lung being more exposed to the air. Dr. Glover's analyses give to the protein compound of tubercle in general a smaller per centage of azote than those of Scherer.

* *Compt. Rendus*, Juin 12, 1847, Academy of Sciences.

"When it is considered that the blood of probably one-third of the population of Europe is more or less affected with the tuberculous taint, and tuberculous subjects are exposed, equally with the robust and healthy, to the exciting causes of all those anatomical changes constituting the fatal diseases which cut short the life of man, it will be readily understood that the morbid anatomy of tuberculosis might be made to comprise the whole anatomical catalogue. Accurate observation would no doubt show that all the pathological products of disease are more or less influenced by the tuberculous state of the blood. Without extending their researches thus far, morbid anatomists have ascertained, not only the fact of the deposition of tubercle in the organs and tissues as a peculiar morbid element in the tuberculous subject, but the occurrence of other pathological conditions; and the positive increased frequency of various anatomical changes in connection with this disease of the blood, and of the particular forms and varieties which it presents. No part of scientific medicine perhaps does higher honour to the profession than the genius, and depth and accuracy of research and observation, displayed in the minute investigation of the characters and specialties of morbid structure in this disease, as shown in the works of Baillie, Laennec, Andral, Carswell, Louis, Hasse, Rokitsanski, and other pathologists."—*Med. Times*, Nov. 16, 1850.

15. *On Elastic Fibres found in the Sputa of Phthisis.* By Professor SCHROEDER VAN DER KOLK.—The learned Utrecht professor, so well known for his researches into the structure of the lungs, declares that the microscope offers an infallible means of detecting the existence of cavities, by exhibiting in the sputa the presence of the *elastic fibres* which surround the cells of the lungs; and this the more certainly as the cavity is in an early stage of formation, consequently at the very period when such a sign, if to be depended upon, is most wanted. They can be examined under a magnifying power of 200. They are of an arched form, very thin, with sharp borders, and are sometimes covered with fat, which is removable by ether. They must not be mistaken for a species of *conferva*, which very rapidly appears in the expectoration, especially when this contains fat, but which is recognizable by its ramifications terminating in tumefied cells.—*British and Foreign Medico-Chirurgical Review*, January, 1851, from *Rev. Med. Chirurg.* vol. viii. p. 222.

16. *Is Fibre an Essential Element in the Structure of Cancer?*—Much difference of opinion still exists as to what are the parts of a cancerous growth which are essential to it, and therefore the following observations on the subject by Dr. REDFERN (*Monthly Journ. Med. Sci.* December, 1850), are worthy of attention:—

"Professor Bennett states that fibres, cells, and a viscous fluid, are the three essential elements of a cancerous formation. Lebert regards the cancer-cell as the only distinctive, constant, and essential element, the predominance of one or other of the accidental and secondary elements determining the varieties of form and appearance; yet he regards the fibres as next in point of importance and frequency, and speaks of them in encephaloma as pale, fine, and in small quantity. Müller says that the fibres of encephaloma are indistinct, and that the fusiform cells are arrested in their development into fibres;—whilst Vogel states, that in encephaloma fibrous structures are wholly absent. As has been before remarked, it is excessively difficult to state whether the fibres which are found in many tumours are really cancerous, or whether they belong to the proper structure of the organ in which the tumour has been developed; and, consequently, careful examinations of cancerous formations in organs which contain no fibrous tissue in their healthy state, become of extreme importance in leading to a true determination of the mode of development and actual position of the fibrous element in cancer.

"From the examination of the cancer of the brain here recorded, and of numerous cases of encephaloma, I am led to believe that fibres are by no means invariably to be found in such growths, and that their fibrous element is accessory and non-essential. If this be so, the existence of fibrous tissue in most cancerous structures remains to be accounted for in either of two ways—viz., by hypertrophy of the normal fibrous tissue of the part, or by a new develop-

ment of fibre from the recently diffused blastema—a development commenced and completed under the influence of the determining energy exerted by the fibrous tissue of the part itself, agreeably to the law of analogous formations. Presuming that the fibrous element of cancer is developed in either of the methods just indicated, its absence in cancer of the brain is readily accounted for, as in that organ there is no fibrous tissue to acquire an unusual development, or to determine the formation of new tissue of its own kind from cells. *If proper cancer cells, of a fusiform shape, ever become transformed into fibres, their presence in cancer of the brain, unaccompanied by the fibrous element, may be owing to a deficiency of the stimulus necessary to insure such development, and may possibly be dependent on the absence of fibres in the original and healthy texture of the organ.*

“In conclusion, I would suggest that a carefully conducted statistical inquiry into the relative amounts of the various elements of which cancerous deposits are composed, viewed in connection with the normal structure of the organs in which each one is found, would be of great service in the further examination of this difficult problem, and that it might perchance lead to its satisfactory solution.”

17. *Value of a Chemical and Microscopical Examination of the Urine as a means of Diagnosis in Renal Diseases.*—Dr. GEO. JOHNSON makes the following just remarks on this subject in an interesting paper in the *London Journal of Medicine* (Feb. 1851):—

“None,” he says, “but those who have paid much attention to the diseases of the kidneys, and to the means of distinguishing one form of disease from another, can form an estimate of the true value of the information to be derived from a chemical and microscopical examination of the urine. It may safely be affirmed, that a microscopical examination of the urine is, in general, as necessary for the formation of a correct opinion in cases of renal disease, as a physical examination of the chest is for the exact diagnosis of diseases within that cavity. To determine the true nature of a disease in the kidney, and to form a probably correct judgment as to its course and termination, it is not sufficient merely to ascertain that albumen is present in the urine, that the specific gravity of the secretion is abnormal, and that moulds of the uriniferous tubes may be detected by the microscope. These signs may each and all be present in a given case; but a more precise examination of the circumstances is necessary for the formation of a correct diagnosis. The mere enumeration of these signs, such as is very commonly given in reporting cases of renal disease, will as little enable a practitioner to ascertain the true nature of disease in the kidney, as would a simple report of a patient having cough, with dyspnoea, expectoration, and a sound produced by the mixture of air and liquid in the air-tubes, suffice for the exact diagnosis of disease in the lung. In both instances, the signs must be exactly observed, and correctly reported; otherwise no sound opinion can be based upon them.

“It is well known that diseases of the kidneys are amongst the most frequent of those which destroy life, and that some forms of renal disease are curable, while others are almost certainly fatal. In many of the most obvious circumstances, all the forms of renal disease are alike; and it is only by a careful attention to differences, which, however minute, may yet be readily and certainly appreciated, that we can hope to distinguish one disease from another, or to give a confident opinion as to the probable course and termination of a case.

“The microscopical examination of the urine is much facilitated by placing it in a conical glass, which will contain about three or four ounces. The fluid should be allowed to stand for a few hours before examination. I usually put it in the glasses at night, and examine it with the microscope on the following morning. This delay is not necessary if the sediment is abundant; but in many cases, when the sediment is small in quantity, it is quite essential that time should be allowed for its deposition to take place. A small quantity of the lower part of the liquid should then be removed with a pipette, and placed in a shallow cell for microscopical examination.”

18. *Cases of Renal Disease.*—The following cases are related by Dr. GEORGE JOHNSON, *London Journal of Medicine* (Feb. 1851), with a view of elucidating the diagnosis and prognosis of some varieties of renal disease:—

CASE I.—*Acute Desquamative Nephritis—Urine very scanty, and highly Albuminous, with Epithelial Casts—Epileptic Convulsions and Coma—Recovery.* I was called to see Ann Fers, æt. 54, as a dispensary patient, on the 6th Dec., 1849. I found her in a state of semi-stupor, and learned that she had been seized with a convulsive fit in the night. She had a wild, distracted look. The tongue was brown and dry. I subsequently learnt that, during the preceding six or seven months, she had lived very badly, in consequence of her husband being out of work. She had gradually become weak; and had restless nights, with frightful dreams, and spectral illusions. About a fortnight before I saw her, she had become much worse, with vomiting, intense headache, slight general dropsical swelling, pain in the back, and very scanty secretion of urine. She was ordered to have six leeches applied to the temples and to take three grains of calomel every four hours.

In the course of the evening some urine was obtained. It had an abundant precipitate of lithic acid, and contained numerous *casts of tubes with entire cells of renal epithelium*;* when boiled, it became almost solid with albumen.

December 7th. In the morning of this day she was much the same. There had been no return of the convulsions; she had the same wild and half-conscious expression of countenance; there was frequent vomiting. Eight ounces of blood were ordered to be taken, by cupping, from the lumbar region: two pills of colocynth and calomel to be taken immediately, and an effervescing draught every four hours.

December 8th. She was better; and said she was much relieved by the cupping; complete consciousness having returned soon after the operation. She had some sleep in the night; but was disturbed by horrid spectral dreams. Bowels freely opened; urine more abundant and clearer; still some vomiting; tongue less dry and cleaner. To take a mixture of sulphate and carbonate of magnesia three times a day.

From this time she steadily and progressively improved. The urine became more abundant; and all cerebral symptoms disappeared.

January 3, 1850. She began to take sulphate of iron with quinine three times a day. At this time the urine had a specific gravity of 1010; it was pale, abundant, contained a very few casts, entangling disintegrated granular particles of epithelium, the casts being of *small size*; albumen was still abundant.

February 4th. The urine had much the same characters. She was still pallid and feeble. The steel and quinine were continued.

March 7th. The quinine was omitted, and the dose of sulphate of iron was increased to two grains, with infusion of quassia, three times a day.

During the month of March she became much stronger, and in every way better. She gained flesh; and her face lost its pallor, and assumed a healthy hue. Towards the end of the month the urine was free from all trace of albumen, and contained no casts, nor renal epithelium. She remained under observation some weeks after this: her health continued good, and her recovery was complete.

REMARKS. I reserve my remarks on the diagnosis and prognosis in this case, until I have referred to some other cases, with which it may be compared and contrasted. With reference to treatment, I have found in other cases of acute desquamative inflammation of the kidney, that cupping in the lumbar region has afforded the same immediate relief to the cerebral symptoms which was so striking in this case. There is no remedy in which, under the same alarming circumstances, I have an equal degree of confidence; and I feel assured that the abstraction of a small quantity of blood by cupping, from the region of the kidneys, is much more efficacious in removing cerebral symptoms than any treatment directly applied to the head. In all cases of acute renal disease, whether occurring as a consequence of scarlatina, or from any other cause,

* It is proposed to call casts of this kind "epithelial casts."

when the urine is very scanty, and the patient complains of severe headache and drowsiness, there is much reason to fear that these symptoms may be followed by convulsions and coma; and unless the earlier symptoms are checked by a rigidly low diet, free purging, and the use of diaphoretics, no time should be lost in applying cupping-glasses with the scarificator over the kidneys. The congestion of the renal blood-vessels is by this means lessened, the secretion is quickly increased, and the blood being thus purified, the cerebral symptoms are directly relieved. It must always be borne in mind, that an imperfect elimination of the urine will impoverish the blood more than the abstraction of a moderate quantity from the vessels, and that an attack of convulsions, if it do not end in fatal coma, may produce greater injury in the brain than all the powers of nature or of art can repair.

CASE II.—*Occasional attacks of Gout—Chronic Bronchitis—Urine Albuminous, and containing Granular Casts—Death preceded by Convulsions—Chronic Desquamative Nephritis.* Benjamin Hobday, æt. 47, a waiter, with sandy hair and pallid skin, was attended by me as a dispensary patient in January, 1847. Was in the habit of drinking freely, and had several times had gout. About three months before I first saw him his wife had observed that his abdomen became tumid and his face rather puffy; this soon subsided, and there was no subsequent appearance of dropsy.

This present illness began six weeks before I saw him, with cough and mucous expectoration. There was large crepitation over both sides of the chest. He was losing flesh; he always appeared dull and heavy; and his tongue was dry and brown. He took an antimonial mixture without relief. The urine was scanty and high coloured; it contained a small quantity of albumen, and numerous *dark brown casts apparently composed of disintegrated epithelium*.* No blood-corpuscles were observed. The specific gravity of the urine was not noted.

January 25th. He had several attacks of convulsion, in the intervals of which he lay muttering and insensible. On the following day he died.

Post-mortem Examination. The brain and its membranes appeared quite healthy. The lungs contained scattered crude tubercles, and were much engorged and carnified. The only organs decidedly diseased were the kidneys; and they presented the characteristic appearances of chronic desquamative nephritis. The cortical substance was wasted, and its surface irregular and granular. Some tubes contained an excess of cells, differing little in appearance from the normal epithelium; while the greater number of the tubes contained the same granular material, which, when washed out, had evidently formed the casts which were observed in the urine during the life of the patient. Other tubes, again, were pale and transparent, being composed only of basement membrane; the epithelial cells, which probably had first become disintegrated, having been washed away by the current of liquid passing through the tubes.

REMARKS. The preceding case is an example of the form of renal disease which is very commonly observed in gouty subjects. The blood is contaminated by certain morbid matters, as a consequence of the gouty diathesis; the kidneys make an effort to eliminate these materials; and, in doing so, their secreting cells undergo a modification. They become opaque and granular, then completely disintegrated, and subsequently are washed away, leaving the tubes denuded. After the destruction of the secreting cells, the tubes waste in consequence of the removal of the vital attractive influence of the cells upon the blood.† The cortical substance thus becomes irregularly contracted and granular.

There is one point of view in which it will be instructive to compare the case of Hobday with that of Fers. It might have happened to me to have seen Hobday for the first time as I did Fers, soon after the first attack of convulsions. The question arises—were there any distinctive signs in the two cases which

* The term "granular casts" sufficiently expresses the character of these bodies.

† On this subject see the author's paper "On the Proximate Cause of Albuminous Urine and Dropsy," in volume xxxiii. of the *Medico-Chirurgical Transactions*; also on the "Inflammatory Diseases of the Kidney," in volume xxx.

would have suggested, in the one case, a much more hopeful prognosis than in the other? This is clearly a question of great practical importance, and one, too, which happily admits of a decisive and satisfactory answer. In the case of Fers, the urine contained what I have called "epithelial casts," that is, fibrinous matter entangling *entire epithelial cells*; and these, with albumen, and very commonly blood, in the urine, indicate a recent acute disease in the kidney. In such a case, there is much reason to expect recovery, if we can succeed in warding off the urgent symptoms induced by the poisoned condition of the blood, consequent on the impaired excretory function of the kidney. In the case of Hobday, the appearances were very different. The casts in the urine were composed of *granular particles of disintegrated epithelium*. My observation has taught me to associate this form of cast with a chronic disease in the kidney. Where these casts have been observed in the urine during life, the kidneys will be found after death more or less wasted, sometimes extremely so, and the tubes will be in the condition described in the case of Hobday, some being entirely denuded, and others filled either with disintegrated epithelium, or with cells differing more or less from the normal epithelium. This chronic form of disease may have advanced to the extreme stage of atrophy before the occurrence of any urgent symptoms. Amongst the most common and most serious of its ultimate consequences is an attack of convulsions, recurring more or less frequently. Now, if in a case in which convulsions have once occurred, we find the urine albuminous and containing the "granular casts" described above, we must be prepared for a recurrence of the attacks, and for the probability of a speedily fatal termination.

I must beg my readers to bear in mind, that the preceding remarks relate to cases in which convulsions or coma, or other serious mischief, have resulted from deficient renal excretion, such symptoms affording evidence of extensive disease in the kidney, which, if it have gradually advanced to that degree by a process of chronic inflammation, is but very little under the influence of treatment. The "granular casts," *per se*, indicate merely the *form* of disease, and not the stage of its progress, or the degree of mischief which it has produced. Still the existence of these casts is a very important sign, being present from the very commencement of the chronic desquamative process. They may often be detected before the disease is so far advanced as to render the urine albuminous; and at this early stage of the disease we have most reason to expect that our remedies will be successful. Further, the proportion of this granular material in a given quantity of urine affords an index of the rate at which the disease is progressing. The granular casts are composed of disintegrated epithelial cells, which, being thus shed, appear in most instances not to be reproduced; the greater, therefore, the quantity of this material discharged with the urine, the more rapid must be the destruction of the secreting tissue of the kidney, and the more speedy will be the occurrence of urgent symptoms from suppressed secretion. In the extreme stages of chronic desquamative disease, the granular casts sometimes disappear more or less completely, and are replaced by casts of a very different kind, as will be seen in the history of the succeeding case.

It may be well to remark in this place, that there are at least two circumstances, under which the occurrence of granular casts does not indicate the chronic disease above alluded to. A moderate amount of care will, however, in either case prevent an error of diagnosis. *First*, after an attack of acute desquamative nephritis, it commonly happens that, for some days, while the urine is returning to its normal condition, casts composed of disintegrated epithelium and blood are discharged with the secretion; these gradually diminish in number, and soon entirely disappear. *Secondly*, after an attack of renal hemorrhage, some blood which has remained in the tubes becomes disintegrated and washed out in the form of granular casts, which, however, have generally a yellowish-brown blood-colour, and this would suffice to distinguish them from the epithelial granular casts. In addition to this, the occurrence of hematuria would be almost conclusive evidence of the non-existence of chronic desquamative nephritis, the extremely thickened condition of the blood-vessels

in that disease rendering the occurrence of renal hemorrhage, at least in the advanced stages, a very rare accident.*

In one case of scurvy I observed yellowish-brown granular casts, which I at first supposed to be indicative of chronic desquamative disease, but which I subsequently found to be composed of disintegrated blood-corpuscles and fibrine. The man quickly recovered under the care of Dr. Todd, in King's College Hospital, and in a few days the casts entirely disappeared.

CASE III.—*Acute Desquamative Nephritis passing into Chronic Desquamative disease, with granular casts in the Urine, and subsequently a waxy deposit in the Kidney, with "Waxy Cysts" in the Urine—Scanty Secretion—Pericarditis—Pleurisy—Death.* John Revels, aged 30, a labourer, of temperate habits, but much exposed to wet and cold in his work. About seventeen years ago he was ill for a month with dropsy, but recovered completely. His present illness began about seven or eight months ago, after getting wet through while at work, and standing for some hours in his wet clothes. After this he felt "chilly and shivering, and miserable;" the breathing soon became oppressed; and he began to suffer from headache, which had continued until the present time; he had gradually grown pale and weak, and had lost flesh; there had occasionally been slight swelling of the face and hands. He had suffered much from dyspepsia, and once had bleeding from the nose to a considerable extent, since which he had discontinued his work, on account of weakness. He reported of the urine that at the commencement of his illness it was very high coloured—"like porter;" and that it was at the same time scanty; but that it soon recovered its natural appearance, and became more abundant than natural. He had sometimes got up four or five times during the night to pass water, and had passed as much as three quarts in twenty-four hours.

This sequence of phenomena is very commonly observed in cases of acute desquamative nephritis; the urine being at first scanty, and darkly tinged with blood, and shortly afterwards becoming paler and much more abundant than in health. I have suggested an explanation of this abundant secretion of urine in a paper "On the Inflammatory Diseases of the Kidneys," published in volume xxx. of the *Medico-Chirurgical Transactions*.

The preceding narrative brings the history of the patient to the 17th Nov. 1847, when he first came under my observation. It was then noted, that he was of middle height, muscular, but the muscles flabby; hair light; face and lips very pallid. He complained chiefly of weakness and slight headache; his breath was short, on making any exertion; the sounds of the heart were normal. Pulse 88; skin cool; tongue clean; no thirst: appetite good; but he was much distressed by flatulence for about two hours after eating. This is one of the most common and distressing symptoms in cases of chronic renal disease. He passed about four pints of urine in twenty-four hours, of specific gravity 1012. It deposited a rather abundant dense whitish precipitate composed of dark granular casts (probably disintegrated epithelium), with some scattered renal epithelium; there was no blood nor crystals: albumen was present in small quantity. The nature and the amount of the sediment at this time indicated rapidly progressing chronic desquamative disease.

November 20th. I admitted him into King's College Hospital, under the care of Dr. Todd. On the 24th and 26th the urine was again examined, with the same result as before.

December 11th. The urine had the same characters as before. During the last twenty-four hours he had passed four pints (16 oz.) and 4 oz. He was getting worse; his face was pale and puffed; the countenance was heavy; he complained of weakness and drowsiness, and occasionally vomited after his meals.

December 16th. I now first observed what I propose to call the "waxy casts"†

* Upon this point, see the author's paper, before alluded to, in *Med.-Chir. Trans.*, vol. xxxiii.

† The term *waxy* is applicable only to the appearance, and not to the chemical composition of the material, which is probably of a fibrinous or albuminous nature.

in the urine, mixed with the dark granular casts before mentioned. The waxy casts were of a yellowish white colour, very much resembling wax; they had a well-defined outline, and a diameter of about 1-400th or 1-500th of an inch; they did not entangle epithelial cells; but some contained, here and there, a few small nuclei, about the size of blood-corpuscles.

December 20th. The waxy casts were more numerous in proportion to the granular casts. The urine had a specific gravity of 1012; albumen was moderately abundant.

December 27th. The legs were swollen, and pitted on pressure.

January 1st, 1848. He had shortness of breath, and uneasiness about the heart. Pulse 96.

January 4th. The countenance was anxious; a loud double friction sound was heard over the heart. Pulse 120. Respiration 32. He passed less urine, perspired freely, and vomited frequently.

January 5th. Feeling that he was beyond hope of recovery, he insisted on being removed to his own house, where he gradually sank. The urine became very scanty. A catheter was once passed, under the idea that the secretion was retained in the bladder; but scarcely any was found there. At length he became delirious, and died on the 11th January.

Post-mortem Examination two days after death. The body was well formed, and muscular, very little emaciated; the skin was very pallid. The pericardium contained a moderate quantity of serum. The surface of the heart was roughened with recent lymph; the heart was larger than usual; the left ventricle was dilated, and its walls were very thick; the valves were all healthy. There was some lymph on the right pleura, in contact with the pericardium. The lungs were congested, but in other respects healthy.

Kidneys. The cortical substance was thinned and contained a yellowish-white firm, waxy material, which, on the surface, formed projecting granules, varying in size from a pin's head to a large pea. In parts where this material was most abundant, the tissue was anæmic; where it was less abundant, the vessels were congested. On the surface of one kidney there was a cyst, of the size of a large pea. Some of the tubes were crowded with epithelium, some contained granular particles of disintegrated epithelium, others were denuded; and others, again, contained the same wax-like material which had formed the casts already described as existing in the urine. At the same time I noted an appearance of fibrous tissue, which I then supposed to be the result of conversion of the basement membrane of the tubes into fibrous tissue, but which I have since ascertained to be hypertrophied arterial walls. With reference to this point I must again refer to my paper in the thirty-third volume of the *Medico-Chirurgical Transactions*.

REMARKS. This case was evidently, at the commencement, one of acute desquamative nephritis. If at this time the patient had been subjected to proper treatment, which would have implied a temporary discontinuance of his work and a strict avoidance of exposure to wet and cold, there is reason to believe that he would soon have been restored to health. The poor man, however, did not apply for assistance until the disease had become chronic, and had advanced beyond the stage at which treatment could be of any avail. The most interesting point in this case is the observation of the first appearance of the "waxy" casts in the urine, their mixture with the granular casts, and subsequently the increased number of the former in proportion to the latter; their appearance in the urine being, doubtless, simultaneous with the deposit of the wax-like material in the kidney, and this material being probably secreted by those tubes which had previously lost their epithelial lining.

The following case, in some points, resembles that of Revels; but in other respects it differs materially. It possesses a peculiar interest.

CASE IV.—*Numerous attacks of Gout—Chronic Desquamative Nephritis—Urine Albuminous—A very few Waxy Casts—Almost Complete Suppression—Urinary Tubes denuded—Renal Arteries and Malpighian Capillaries thickened.* Thomas Hewson, æt. 49, a coachman, had always drunk freely of porter—on an average half a gallon daily. At the age of twenty-five, he had inflammation of the chest; and during this attack he was first seized with gout in one great

toe. About three or four years after this, he had a second attack; since which the attacks had returned with increased frequency, and had at different times affected almost every joint. For several years before his death, he was disabled by gout for about nine months in each year; his diet had consequently been very poor. This is one amongst a great number of instances, with which I have met, in which a labouring man has brought upon himself and his family long-continued severe suffering and privation by an intemperate use of London porter. I attended him frequently as a dispensary patient, for attacks of gout, before I had any suspicion of renal disease.

June 7th, 1849. I examined the urine. It had a specific gravity of 1015; it was pale, and deposited a very slight cloud, containing a few well-defined "large waxy casts," similar to those observed in the preceding case, but very much less numerous. Scarcely a particle of renal epithelium could be seen. The urine contained a large quantity of albumen, becoming almost solid when boiled. The patient was of rather small stature; his hair and whiskers were sandy; his face pallid; he was considerably emaciated. During the last two years, the legs had occasionally become cedematous after sitting up; and the face had sometimes been slightly swollen, but there was now no appearance of dropsy. A short time since he had an attack of gout; but he now complained chiefly of weakness, which confined him to bed. The joints were free from deposits and distortions, except a slight contraction of the fingers of one hand. His wife observed that, during the earlier attacks of gout, the urine was generally high-coloured and turbid, but that latterly it had remained pale and free from deposit. He was ordered to take small doses of tincture of sesquichloride of iron.

June 18th and 27th. The urine was examined, with the same results as before.

July 3d. During the last fortnight, he had become deaf. He was much changed in appearance; he sometimes appeared confused in his intellect; the limbs frequently moved in a chorea-like manner. He was very pale and thin, and complained of an acrid taste in the mouth. His breath was fetid; he had occasional bleeding at the nose; there was frequent vomiting. The urine was scanty; the quantity obtained was insufficient for ascertaining its specific gravity; it was highly albuminous, and threw down a rather copious dense precipitate, of a whitish brown colour, composed of numerous *waxy casts varying in diameter from 1-375 to 1-750 of an inch*. There was no epithelium, either entire or disintegrated. He was ordered to have an effervescing draught every four hours.

July 7th. He was worse; had frequent vomiting and severe headache. He had passed only about two ounces of urine during the last twenty-four hours. It was light coloured, very albuminous, and had a very slight sediment, containing traces of the same casts as before. The effervescing draughts were repeated; and a quarter of a grain of elaterium was prescribed, to be taken immediately.

July 10th. He was much the same. The urine amounted to about four or six ounces in twenty-four hours. Yesterday its specific gravity was 1016; this day it was 1019; it was pale, highly albuminous, and had a very scanty sediment, with traces of the same casts as before.

July 14th. He was much the same, but more exhausted, and very pallid; the skin was cool. He became suddenly faint; and died soon after my visit, retaining his consciousness and power of speech until within a few minutes of his death.

Post-mortem Examination on the fourth day after death. The weather being warm, and putrefaction having commenced, the kidneys were removed by an opening in the abdomen; no other parts were examined. Both kidneys had much the same appearance. Their size was rather less than normal; one weighed $3\frac{1}{2}$ oz. The surface was smooth. In the cortical substance of one, there was a cyst about the size of a horse bean. They were slate-coloured, from incipient decomposition. The chief structural change visible to the naked eye consisted in the absence of the usual lobular appearance on the surface. The cortical substance was rather thin; but an unpracticed observer might have

pronounced the kidneys healthy. On a microscopic examination, the Malpighian bodies appeared very conspicuous, while the tubular structure was confused and indistinct. After the addition of acetic acid, the tubes became much more distinct; many were denuded and atrophied. Scarcely one could be seen with the normal epithelial lining; some contained oil; others, brown granular particles of disintegrated epithelium; and a very few contained the white waxy material, which had formed the casts observed in the urine during life. In consequence of the atrophy of the tubes, the Malpighian bodies seemed relatively more numerous, and closer together than ordinary; they were not perceptibly enlarged; one of the largest measuring $1\frac{1}{75}$ th of an inch. The Malpighian tufts were of a dull white colour: the surface of the vessels was smooth, their coats thickened, their canals clearly visible in many instances, especially after adding acetic acid, which also brought into view the blood-corpuscles in their interior. The coats of the arteries were hypertrophied; and the canal of one contained some small masses of oil.

REMARKS. There can be little doubt that the morbid process in the case of Hewson was essentially the same as in that of Revels; and that the urine, if examined at an earlier period of the disease, would have presented the granular casts, which an examination of a great number of cases of this disease has shown to be quite characteristic. In this case the desquamative process had continued until nearly all the tubes had lost their epithelial cells; and, then, as a necessary consequence, secretion was almost completely arrested. There was one remarkable difference between the two cases; the wax-like material, which was deposited so abundantly in the kidneys of Revels, was, in the case of Hewson, only just sufficient to afford the data for a correct diagnosis and prognosis.

Immediately after the case of Hewson, another essentially like it occurred to me, in a woman named Brooks. The urine had the same characters, and contained the peculiar large waxy casts. The kidneys presented the same general and microscopical appearances.

When the urine is pale, and of rather low specific gravity, containing a large quantity of albumen, with a scanty sediment, composed of the peculiar large waxy casts, as before described, with little or no epithelium, either entire or disintegrated, it may be almost certainly inferred that the chronic desquamative process has destroyed the secreting cells of the kidney; and that if urgent symptoms of suppressed secretion are not already present, they will very speedily appear.

I have several times spoken of the waxy casts as being "large," and I have given the diameter of those observed in the urine of Hewson. My reason for doing so has been, that as the diameter of these casts was equal to the average diameter of healthy kidney tubes, *their size was sufficient evidence that the tubes in which they had been moulded had no epithelial lining, and were composed only of basement membrane*, as the post-mortem examination of the kidneys proved to be the case.

I will now give the particulars of a case in which what I propose to call "small waxy casts" were observed, and which formed the ground of a favourable prognosis, which the result proved to have been correct.

CASE V.—*Intemperate Habits, with an insufficiency of Nutritive Food—General Dropsy—Ecthymatous eruption over the body—Urine highly albuminous, and containing "small waxy" Casts—Recovery.* George Henry Lewis, aged 45, of intemperate habits, much reduced in circumstances, and latterly living very badly, was admitted into King's College Hospital, under the care of Dr. Budd, on the 6th June, 1849. He was suffering from general anasarca and ascites in a very great degree, and his body was covered with an ecthymatous eruption. He was very pallid; his breathing was difficult, and accompanied by a wheezing sound. The dropsy had appeared two weeks before, and the eruption a month earlier. The sounds of the heart were normal. The urine was scanty, rather light coloured, somewhat cloudy, of specific gravity 1012, becoming almost solid with albumen when boiled. After standing it deposited a pretty abundant whitish dense precipitate, chiefly composed of *transparent waxy casts, about one-thousandth of an inch in diameter*. Very few epithelial cells were seen, and no blood-corpuscles, or very few.

Few, probably, who saw the miserable condition of this poor man at the time of his admission, would have given a favourable prognosis: but after a microscopical examination of the urine, I ventured to suggest to my friend Dr. Budd the probability of his patient's recovery, for the following reasons. The appearance of the casts seemed to indicate merely congestion of the Malpighian capillaries, and an absence of disease in the epithelial cells. The diameter of the casts proved that they were moulded in canals lined by epithelial cells; in this respect forming an instructive contrast with the casts in Hewson's case. The almost entire absence of epithelial cells from the urine showed that the secreting structures were but little involved; since any morbid matter in the blood, injuriously affecting the secreting cells, would have produced a desquamation of these structures. The inference was that the blood was in such a morbid state as produced congestion of the Malpighian capillaries, while it affected but slightly, if at all, the secreting cells of the kidney. As a consequence of the congestion, coagulable matter with serum escaped from the Malpighian vessels, and, after being moulded in the tubes, was washed out with the urine, forming the "small waxy casts" already described.

He was first put on milk diet, and was ordered to have a tepid bath every morning, and to take small doses of solution of citrate of ammonia, with fifteen minims of ipecacuanha wine every six hours. He began to improve almost immediately. It may be well to mention here, that for several years he had been subject to epileptic fits, which returned with increased frequency while he was suffering from the dropsy.

The urine was frequently examined, and its condition carefully noted. The albumen continued very abundant for about six weeks. The quantity passed in twenty-four hours did not exceed one pint when he was first admitted, but soon became more abundant, and for some days exceeded the normal quantity. Thus, on the 18th June, it measured five pints. In this increased flow of urine, following upon a scanty secretion, the case resembled one of acute desquamative nephritis.

June 25th. It was now first noted that some of the casts entangled a few oil-globules, and here and there appeared a cell containing oil. These appearances continued for about three weeks, and occasioned some anxiety lest the kidneys should undergo fatty degeneration; the more so as the albumen was still very abundant.

About the middle of July, the oil was evidently diminishing, and the casts were less numerous; but the albumen was as copious as at the commencement. The specific gravity of the urine was 1014.

July 26th and 27th. The albumen was reported to be much less, so that there was scarcely more than opalescence when the urine was boiled. The urine was clear; there was no cloud or sediment after standing, nor anything visible by the microscope. In the mean time, the eruption and the dropsy had entirely disappeared, his appetite and strength had returned, and the pallor of his face had been replaced by a healthy hue. Since the 26th June he had been taking steel, sometimes in the form of citrate, and occasionally in that of tincture of the sesquichloride.

July 30th. He was progressing favourably; had improved in all respects. The bowels were regular; the tongue clean; he slept well. The urine was scarcely albuminous.

August 1st. He left the hospital without leave, and has not since been heard of.

Remarks. It is instructive to compare the history of this case with those of Revels and Hewson. In appearance, the condition of Lewis, when he first came under observation, was much more desperate than that of the other two. The microscope was the only means of determining that the probability of recovery in each case was precisely the reverse of that which, to a superficial observer, it might appear to be.

19. *Diagnosis of Fatty Degeneration of Kidney.*—[Dr. GEO. JOHNSON makes the following remarks on the Diagnosis of Fatty Degeneration of the Kidney;—one of the most intractable, and unhappily one of the most frequent of the forms of renal disease.]

The urine, in cases of fatty degeneration of the kidney, has characters sufficiently distinctive to render the diagnosis a matter of ease and certainty. It is commonly of a rather pale, yellowish colour. When first passed, it is clear; but, after standing for some hours, it usually deposits a light, cloudy sediment; sometimes, in the early stages, the urine has a dark smoky colour, from containing blood. The quantity secreted is less than normal, and its density in most cases exceeds the healthy standard; it is by no means unusual to find the specific gravity ranging from 1025 to 1030. The albumen is generally very abundant, so that, when boiled, the urine becomes almost solid. On a microscopic examination of the cloudy sediment before mentioned, there may be seen transparent casts of rather small size, in many of which are entangled oil-globules of various sizes, also cells containing oil-globules in greater or less abundance. There are besides scattered cells, more or less completely filled with oil. I might transcribe from the pages of my note-book many cases, in which the urine has presented more or less of the characters here described, and in which not one of the patients has recovered. The majority of these cases have terminated fatally; while, in a few instances, the symptoms continue in a greater or less degree; the urine continuing highly albuminous, and presenting unequivocal microscopical evidence of the true nature of the disease. For the purposes of prognosis, it is as important to distinguish between a case in which the urine presents the characters here described, and a case of simple desquamative nephritis, as it is to distinguish tubercular disease of the lung from acute pneumonia or bronchitis.

Now, since the prognosis in a case of confirmed fatty disease of the kidney is thus unfavourable, it is important that all who examine the matter should clearly understand that albuminous urine may contain a certain amount of oil, entangled in fibrinous casts, or enclosed in epithelial cells; and yet the disease may be of a simple nature, and may speedily terminate in recovery. It is very common to find small quantities of oil in the casts and in the cells, after a simple inflammation of the kidney has existed for three or four weeks. Now, since an inflammatory disease does in some instances become chronic, and terminate in confirmed fatty degeneration, the appearance of any oil in the urine must occasion a certain degree of anxiety, lest it should increase in quantity, and take the place of the simple inflammatory products. In the case of Jervis, it will be remembered that oil was seen in the casts and in cells, that it continued for several days, and then entirely disappeared simultaneously with a rapid decrease in the quantity of albumen. The following brief notice of a case will serve as an example of what may frequently be observed.

Acute Desquamative Nephritis, with general Dropsy—Urine scanty, highly albuminous, and containing fibrinous Casts, Epithelium, and Blood—subsequently oil in the Casts and Cells—Complete Recovery. John St. Ledger, aged 49, a billiard-marker, applied to me at the Dispensary on the 12th April, 1847, and gave the following account of himself. During the period of Lent, he had fasted very rigidly, *i. e.* during four days in the week he took only one meal a day, composed of fish, with milk and potatoes; during the remaining three days he took animal food as usual, perhaps rather in excess. Under this plan of diet he found himself getting thin and weak, and he became very dyspeptic and flatulent after his meals. On Easter Monday, April 5th, he felt drowsy, and had muscular pains. The next day, dropsical swelling appeared, and the urine was very scanty. He continued to get worse until the 12th April, when he first came under my notice.

There was then slight general dropsy, headache, and drowsiness; the urine was scanty, high-coloured, and very albuminous. It presented the characteristic appearances of simple acute desquamative nephritis; containing fibrinous casts, entire epithelial cells, and blood-corpuscles. During the first few days he was much benefited by cupping, warm baths, purging, and diaphoretics.

A careful microscopical examination of the urine was made almost daily. Its characters remained the same until the 29th April, when, for the first time, it was seen that many of the epithelial cells contained oil-globules. At that time, I knew much less of the history of this disease than I now do; and I quite despaired of my patient's recovery. Day after day the oil was visible, some cells

being completely filled with it; but, at the same time, *by far the greater number of cells were entirely free from oil*, and this is the circumstance which, with my present knowledge of these cases, would have suggested to me a favourable prognosis. Early in the month of May the dropsy disappeared, but the patient continued very weak and pallid.

May 6th. He began to take a draught three times daily, consisting of diluted nitric and diluted hydrochloric acids, ten minims of each, in infusion of quassia.

May 31st. The above medicine was discontinued, and he took an ounce of compound mixture of iron three times daily. Soon after the change of medicine, he began to gain strength, and to improve, in every way, very rapidly.

June 14th. The quantity of urine was three pints in twenty-four hours; of specific gravity 1017; the colour was natural, the albumen much diminished. It contained a few casts, with epithelium more or less disintegrated, and scarcely a trace of oil.

At the beginning of July, the urine was free from albumen, and presented no trace of oil, but a very few casts with disintegrated epithelium; he was gaining strength, and was much improved in appearance. Once after this, there was a temporary return of albumen, but it soon disappeared, and he completely regained his health and strength. He has occasionally since been under my care for trifling ailments; I have several times examined the urine, and have found it, in every respect, quite healthy.—*Lond. Journ. Med.*, Feb. 1851.

20. *On a Species of Atrophy of the Spinal Marrow.* By Dr. NAMIAS.—A woman, æt. 48, was admitted into the Venice hospital, who had suffered from paralysis of the lower extremities during three years, of the origin of which she could give no account. She possessed no voluntary power over them, and the upper extremities were also in a state of semi-paralysis and constant flexure. She was submitted to electricity during three months, and recovered power sufficient to enable her to walk slowly about the ward, the flexure of her fingers continuing. Some months after, her power again declined, but she was again improving under the use of electricity, when she was eventually carried off by diarrhœa in the cholera season.

At the *post-mortem* examination, the spinal marrow was found flaccid; and hollowed out in its substance was a cavity extending from the first cervical vertebra to within two fingers' breadth of the *cauda equina*. A catheter of medium size could enter this cavity, which occupied the centre of the medullary cord, the absence of the central gray matter giving rise to its production. Cruveilhier has noticed this absence of gray matter in children dying with spina bifida; and Morgagni relates the case of an adult, in which the cavity was large enough to admit the end of the little finger, but extended for a far less distance than in the present case.

Dr. Giacinto Namias observes, in reference to the improvement of the paralyzed limbs which resulted from the use of *electricity* in this case, that it is only one out of many examples of such improvement being produced even in cases wherein serious organic lesion existed; so much so, that by its patient and *prolonged* employment, voluntary movement has often been procured in cases in which the causes of the paralysis were absolutely irremediable.—*Rev. Med.-Chir.*, viii. p. 133.

The important resources derivable from the persevering use of galvanism, in cases of paralysis which have resisted all other means, have been frequently demonstrated by M. Duchenne, who, having had the principal hospitals of Paris freely thrown open to him during the last five or six years, has acquired a remarkable dexterity in its application. As he is about to publish a work upon the subject, detailing the results he has attained in respect to the diagnosis and treatment of the different forms of paralysis, we will only state here, that his plan consists in *localizing* the galvanic action upon the different muscles, which, by the employment of moistened excitors of a great variety of form and size, he believes he can do with the greatest nicety. He has derived few satisfactory results from *indirect muscular galvanization*, or acting upon the muscles through their nervous trunks. When he wishes to localize galvanic action upon the *skin*, he previously dries it with an absorbent powder, and passes over

the surface dry metallic excitors, the sole result being the various degrees of sensation according to the intensity of the currents and duration of the intermissions.—*British and Foreign Medico-Chirurgical Review*, January, 1851, from *Archiv. Générales*, tom. xxiii. p. 420.

21. *Vaccination as a Preventive of Small-pox*.—Dr. ALEXANDER KNOX concludes a highly interesting paper on the existing state of our knowledge of vaccination and revaccination as preventive of small-pox (*Lond. Journ. Med.*, Dec. 1850), with the following practical deductions, suggested by a careful reconsideration of the subject, and which are well calculated to reassure confidence in the protective influence of cow-pox.

“1. It appears to have been satisfactorily demonstrated, that secondary vaccinations have succeeded in a considerable proportion of the cases in which they have been resorted to.

2. It also appears that small-pox has prevailed of late years to an increased extent.

3. The results in question have been attributed, partly to a diminution of energy in the vaccine infection, caused by repeated transmission through the human subject, and partly to the alleged tendency of the immunity conferred by cow-pock, to wear out of the system, after an uncertain period from the date of vaccination.

4. Both the success of revaccination, and the increased prevalence of casual small-pox, appear, however, to have been exaggerated in the popular belief; and, at any rate, the facts seem explicable, in a great measure, without resorting to the hypothesis just stated, by attributing them in part to the imperfect performance, or the entire neglect of vaccination; in part to the temporary tendency to increased diffusion, at distant and uncertain periods of time, which characterizes all epidemic diseases; and, finally, to peculiarities of constitution, which render many individuals absolutely insusceptible of being protected against a secondary attack, either by vaccination or by inoculated or natural small-pox.

5. It has been proposed to re-introduce variolous inoculation as a certain remedy for the occasional failure of vaccination; but the superior efficacy of the practice is not only questionable, but its indiscriminate employment has been proved to be dangerous, and destructive of human life, and is therefore highly to be deprecated.

6. Revaccination, however, may be prudently recommended, not only as innocuous in itself, but also, on various grounds, as positively advantageous, even by those who question the gradual extinction of the protective influence of cow-pock.

7. It does not appear that genuine vaccination has lost any of the efficacy which at any time really appertained to it; and it still remains to be demonstrated that it is not capable of conferring, to the end of life, complete immunity from the horrors of small-pox, on a large majority of all the individuals fully submitted to its influence.

8. Even where vaccination fails to prevent a secondary attack, the consecutive disease, in general, assumes a mild and modified form, although, in some instances, it may be sufficiently severe to leave the countenance marked with scars, and still more rarely to terminate in death: but fatal cases from secondary small-pox do not seem to be more frequent after vaccination than after a primary attack of the natural disease.

9. On the whole, it is respectfully maintained that cow-pock, imparted in the most efficient manner of which it is capable, by vaccination, and, under certain circumstances, by revaccination, is the most eligible safeguard within our power against small-pox; and that it will prove effectual in most constitutions, not inherently insusceptible of protection, by any means whatever.”

22. *On Vaccination and Revaccination*. By M. CRANINX.—An interesting discussion has lately taken place, at the Belgian Academy of Medicine, upon the subject of vaccination. The following were the conclusions of M. Craninx, the reporter, which were affirmed by the academy: 1. Variola and varioloid

are but degrees of the same affection. 2. Simple variola may attack the same individual twice, but scarcely ever in rapid succession (*coup sur coup*). 3. It may also attack persons who have been properly vaccinated, but it is then generally mitigated. (M. Lombard observed that the word "generally" must be dwelt upon; for subjects who, to all appearance, have been well vaccinated, at a distant period occasionally die from variola. He added, that in the dreadful epidemic which has just devastated Liege, this was the case, while none of those who underwent revaccination took the disease.) 4. Variola, after vaccination, is almost without example within the next ten years; but it is observed from time to time in those who have been vaccinated for more than twenty years. It is, however, very rare after forty. 5. It is of more frequent occurrence, but, at the same time, milder, in the vaccinated, than in persons who have already undergone an attack of it. 6. Varioloid is observed oftener than variola after vaccination, and is not unfrequently observed in children; but it increases both in frequency and severity from ten to twenty-five or thirty years. 7. Variola and varioloid in the vaccinated, not following the same course in respect to frequency or intensity as in the non-vaccinated, the cases in which they are seen among the former cannot all be explained upon the supposition of a faulty vaccination, but upon that of a diminution of the preservative action of vaccination. 8. Perhaps we should admit incomplete vaccinations possessed of a less degree of preservative power, and capable of becoming sooner exhausted. In this point of view, sufficient importance is not attached to the general reaction which should accompany the vaccine eruption, indicating the action of the virus upon the general economy. 9. If the protective power of vaccination has become enfeebled by time, if not in all, at least in several individuals, there is not sufficient evidence to show that the vaccine, considered in itself, has lost its efficacy since the first years of its discovery. While there is doubt, it is better to revert to the cow-pox whenever the opportunity presents itself. (Upon this resolution, M. Seutin remarked that, believing as he did, that the vaccine lymph which existed is efficient, and that it fails either from not having been taken well, or owing to individual susceptibilities, he considered this conclusion would spread needless alarm. M. Lombard observed, however, that the new cow-pox, recently imported from England, certainly exhibited a more certain and more active effect.) 10. As the immunity conferred by vaccination is not indefinitely absolute, revaccination, at least for a great number of individuals, is rationally indicated. 11. Observation shows, that when it succeeds, the second vaccination produces phenomena very nearly like the first, so that we would, *à priori*, anticipate the same effects from it. 12. Experience has determined this point: it has proved that a recent revaccination preserves from variola and varioloid, and that, practiced on a sufficient scale, conjointly with vaccination, it constitutes a sure means of arresting the progress of this malady when it appears epidemically. 13. It succeeds best in proportion as it is most required, that is, the more remote the period is since the individual has had variola, or has been vaccinated. 14. If it does not succeed at a first attempt, it should, if necessary, be repeated several times. 15. During the prevalence of an epidemic of variola or varioloid, it is prudent to revaccinate all those whose first vaccination dates ten years back, and all those whose first vaccination gives rise to any doubt. 16. Revaccination may be performed almost indifferently with the lymph of a primary or a secondary vaccination. 17. It is imprudent to inoculate with the lymph of spontaneous varioloid; nevertheless, in the time of an epidemic, if vaccine lymph could not be possibly obtained, we should be authorized in the employment of this fluid, and to transmit it as we do vaccine lymph. 18. If revaccination is so useful a thing, at least for a certain number of persons, vaccination loses none of its importance; and the government and the profession should exert all their influence to enable the entire population to participate in its benefits.—*Gazette Médicale de Paris*, No. 27.

23. *Results of Revaccination in the Prussian Army during 1849.*—During the year 1849, there were 51,637 individuals revaccinated, of whom 39,116 had

distinct cicatrices of the former vaccination, 8706 had these in an imperfect condition, and 3815 were destitute of them. The vaccination

Pursued a regular course in	30,457
An irregular one in	8,467
And failed in	12,713
Succeeded on repetition in	2,862

Thus, then, of the 51,637 vaccinations, 33,319 were quite successful; vesicles running a normal course being produced. This proportion, amounting to 64 per cent., is nearly 1 per cent. more than was obtained in 1847 and 1848.

Of the different forms of variolous disease which appeared in the army throughout 1849, only 62 cases occurred, and were distributed as follows:—

	In persons not revaccinated.	Revaccinated without success.	Revaccinated with success.	Total.
Varicella	2	6	5	13
Varioloid	14	17	9	40
Variola	6	2	1	9
	<hr/> 22	<hr/> 25	<hr/> 15	<hr/> 62

In almost every case the disease ran a mild course, and frequently was quite insignificant. One case only was fatal. A recruit vaccinated when a child had not yet been revaccinated, and died on the 10th day.—*British and Foreign Medico-Chirurgical Review*, January, 1851, from *Med. Zeitung*, 1850, No. 19.

24. *Abortive Treatment of Variola by the Application of Collodion.*—Collodion has been found useful in arresting the course of traumatic erysipelas and of herpes: and the *Bulletin Général de Thérapeutique* for Oct. 30, 1850, contains an account of a case occurring in the practice of M. ARAN, which seems to show it to be an efficient agent in producing abortion of the variolous pustules. We abridge the account given.

CASE. A young man, aged 19, was admitted into the Hôpital Bon-Secours, in Paris, with confluent small-pox in an early stage. The face was thickly covered with small pustules, and there was already intense swelling and redness. The fever was very moderate. M. Aran applied a layer of collodion over the face, to produce abortion of the pustules. In two days, the lips, and lobes of the ear, which had not been covered, showed well-developed pustules; while scarcely anything could be seen through the collodion, and, on raising it, the pustules were found arrested. The collodion having become accidentally removed in parts, the exposed portions of the face, in fifteen or eighteen hours, presented well-developed pustules. It was again applied, and constantly watched, to prevent the patient from tearing it off during his delirium. On the eighth or ninth day from the first application of the collodion, it began to fall from the eyebrows, leaving them of a rose colour, without any scars. On the following days, the collodion fell from the other parts of the face, together with the desquamated epidermis. The skin of the face appeared as if it had undergone desquamation after erysipelas. On the other parts of the body, the eruption, which had been very confluent, had left numerous spots and scars. The general condition of the patient was most satisfactory.

Collodion seems to act as a mechanical constringent of the tissues. This view is supported by the fact that, in the latter days of the suppurative stage, the pustules were seen to appear at the edges of the layer, and to raise it, while nothing of the kind was observed elsewhere. M. Valleix has also used the same remedy in a case of *variola discreta*, with perfect success; and in a case of non-confluent small-pox, M. Aran has procured the abortion of almost all the pustules on the face, so as to render it extremely difficult to find a mark.—*London Journ. Med.*, Jan. 1851.

25. *Combination of Auscultation and Percussion.*—Dr. ROGER has called attention to a process, first pointed out by Laennec, in which percussion and auscultation are combined. A solid cylinder of cedar-wood is used for auscultation, while a person well versed in percussion practices it round the stethoscope,

and in the entire extent of the region to be explored. In this manner, we can not only determine the limits of an organ, as of the heart, liver, spleen, or veins, but also those of the cavity which contains any of them.

This process, though possessing incontestable advantages, is opposed by two serious inconveniences. The first is, the dexterity required to enable us to appreciate the result. M. Roger was six weeks in acquiring this power. The other objection is, the difficulty of introducing into private practice, especially in the country, a process which requires the aid of a second person. The method, however, would be valuable in cases of difficult diagnosis, and in which great precision is required in determining the therapeutic indications. —*London Journ. Med.*, Dec. 1850, from *Comptes-Rendus de la Soc. Méd. des Hôpitaux*, April, 1850.

26. *On Auscultation in the Pneumonia of Infants.* By MM. TROUSSEAU and LASÈGUE.—The authors preface their essay by some observations upon auscultation of infants in general, which they consider to be far more difficult than is usually supposed. The restlessness and cries of the child confuse the results; and the small space to be operated upon, with the inconvenient position to be assumed, prevents the prolonged examination which is necessary. When we are in no doubt as to the nature of the disease, its limits often cannot be ascertained, for an abnormal sound, whensoever it may arise, is heard all over the chest. Both normal and abnormal sounds are, therefore, best heard where the ear can be most conveniently placed, namely, *opposite the subscapular fossa*. From the *resonance* of the cry little is to be learned, and the *souffle* of the child is indistinct. The comparative exaggeration and feebleness of the respiration in different parts of the chest are seldom to be observed, and the exaggerated sound of one lung when the other is bad—*puerile respiration*—is comparatively wanting in the child. Most is to be learned from the *râles*. The *crepitant* is very rare, and has not the fineness or the dryness of that of the adult, the *subcrepitant* and *sibilant* being those usually present. Their temporary absence does not indicate the absence of lesions, for the subcrepitant *râle* may cease for minutes or even hours, and return again, no apparent cause for the oscillations being observable.

The pneumonia of infants is never an original affection, being always preceded for a longer or shorter time by bronchitis; and it is very important to seize the point of transition of the one into the other, as the implication of the parenchyma so much adds to the danger. Bronchitis may exist only for a short time, or for months, before being followed by pneumonia. Indeed, there are two forms of it; one in which *pneumonia necessarily follows*, and the other in which it is a mere *coincidence*. In the first case, there is much more fever present than the local symptoms seem to warrant, and the cough is dry without *râle*, the first sound that is heard being the subcrepitant *râle* of the pneumonia, two or three days after the bronchitis has existed. In the other case, the catarrh passes through its usual stages, having the large mucous or sibilant *râles* present, the subcrepitant *râle* appearing suddenly among these, and not the one gradually becoming fused into the other. In general, the sibilant *râle* gives way to a mucous one of short duration, prior to the occurrence of the subcrepitant rhonchus. Whenever bronchitis, characterized by cough and fever, does not manifest its auscultatory signs, pneumonia is imminent; but when mucous or sibilant *râles* have been heard for some time, the subcrepitant *râle*, when it occurs, has no longer the same importance. Sometimes, indeed, the subcrepitant *râle* is never present, the *souffle* alternating with the mucous. In other cases it may accompany the disease in all its stages; and in some that run a rapid course, especially in rickety children, the disease may terminate fatally without any other having become developed. Whenever it ceases completely, without being replaced by any other form of rhonchus, the general symptoms still continuing menacing, the augury is very bad. If, on the other hand, it persists, though the respiration be easier, the fever less intense, and the countenance less anxious, the amelioration cannot be relied on, for it is only a truce. This *râle* is larger, the more superficially the affected lobules are situated, and is smaller when they are more central. When the hepatized

tissue is found highly coloured, it has persisted to the last; but when this is pale, it has usually given way, prior to death, to other signs. It is no measure of the more or less advanced stage of the lesion.

The *souffle* in hepatization, at first soft and veiled, becomes eventually almost as distinct as in the adult, being either accompanied by the subcrepitant *râle*, or alternating with it. It may disappear for short intervals, and undergoes some change from posture. It is one of the most certain signs of the disease, and if the patient dies without its being developed, this is because his prior state of health or some other general accident has complicated the case. It indicates that hepatization occupies an extensive portion of the parenchyma; and by practice its intensity becomes a measure of this. Neither it nor the subcrepitant *râle* indicates the degree of the change, though they may its extension—different parts of the lungs, in fact, undergoing simultaneously a very different degree of change. The *souffle* appears early in that form of the disease in which contiguous inflamed lobules unite and invade a whole lobe or contiguous lobes; while in the form in which the hepatized lobules are dispersed over almost the entire lung, so as to unite nowhere into such large masses, although constituting a great aggregate, the *souffle* appears later.

As in the adult the sign of improvement is a returning crepitation, so is the returning mucous *râle* in the infant, displacing the *souffle* and subcrepitant *râle*, though it may reappear without the intervention of this last.

All the auscultatory phenomena are never entirely wanting during the whole course of the disease, but any one of them may be so, even in cases of such severity as to lead to the full expectation of their presence.—*British and Foreign Medico-Chirurgical Review*, January, 1850, from *Archiv. Générales*, t. xxiv. pp. 130-42.

27. *Local Paralysis in Infancy*.—Dr. SIMPSON called the attention of the Edinburgh Obstetrical Society to the frequency of local paralytic attacks during infancy and childhood, and pointed out the following circumstances as the most important points in their history:—

1. The paralysis most frequently seems to affect a single limb—as one leg or one arm—sometimes a few fingers only; occasionally it appears in the form of hemiplegia, affecting one whole side; sometimes in the form of paraplegia. Dr. S. mentioned a case in which the paralysis occurred in early infancy, and affected both lower extremities, the left upper extremity, and the left side of the face, the child, now several years old, being very acute and intelligent.
2. The side of the face, but more particularly the upper and lower extremity, when paralyzed in infancy, do not grow in relative proportion with the corresponding healthy parts; so that, when the individuals affected reach adult life, the paralyzed extremity appears small, diminutive, and shorter than natural.
3. The paralyzed limb does not appear to want sensation, and the motory muscular power, although greatly diminished, is not entirely abolished. When the local paralysis is seated in the leg, the person hence usually walks imperfectly, throwing out the foot at each step with a flap-like motion, and often with the toes or external surface of the foot somewhat drawn in, as the leg is each time extended.
4. The disease generally comes on during the first three years of life, and especially during the currency of that morbidly irritable state of the nervous system which co-exists with teething. Dr. S. had seen an instance in which two children of the same family were affected within a week of each other.
5. The disease generally supervenes very suddenly, sometimes in the course of a single night, and is often, at the time of the attack, accompanied with little or no constitutional derangement; but occasionally it comes on with a fit of convulsions or other symptoms of some temporary cerebral derangement.
6. The affection is frequently first noticed immediately after fever, especially after the eruptive fevers; and occasionally it comes on during the period of convalescence from them. Dr. S. described a case of paraplegia in a child three years old, which came on during the convalescence from scarlatina—the patient going to bed apparently well, and waking paraplegic, and astonished at her own want of power of movement in both her legs. Intestinal irritation in some cases appears to be the exciting cause.
7. When the patients do not recover from

the paralysis within a few days after the attack, under antiphlogistic measures (when the state of the system has allowed them), and careful correction of the condition of the intestinal canal and other functions, the paralytic affection almost always proves chronic, and, indeed, permanent. Dr. S. had seen counter-irritation to the spine, galvanism, &c. &c., employed, but without success. He had seen three instances in which small and long-continued doses of nux vomica had appeared to act beneficially in diminishing the state of paralysis. Keeping all the functions of the body as near the standard of health as might be, friction and bathing of the affected limbs, and inculcating as much muscular exercise of them as possible, seemed to be the principal indications of treatment, when the disease had already passed into the chronic type. 8. The true pathology of the disease was as yet little known, though the affection was of frequent occurrence. No autopsic investigations appear to have been made with the view of ascertaining the state of the brain, spinal cord, and nerves, in the local paralysis of infancy.—*Monthly Journal of Medical Sciences*, Jan. 1851.

28. *Recent Epidemic of Scarlatina at Berlin*.—Dr. HELFFT states that the scarlatina which has lately prevailed epidemically in Prussia, and other parts of Germany, has presented several anomalous features, which he deems it his duty to lay before the profession.

In many cases all the symptoms of scarlatina except the eruption were noticed in members of the same families among whom the fully developed disease was present.

In very many patients the disease assumed a malignant character; and here the surface was pale, or the skin presented a dark purple colour, and in others was studded with petechiæ. In these cases the temperature of the surface of the body was much lower than natural. The pulse was small, frequent, and sometimes intermittent. The fauces were of a dark red colour. The tonsils presented deep ulceration, by which they were partially or totally destroyed. Diphtherite was frequently observed, spreading over the upper part of the pharynx and the fauces, extending to the Eustachian tube and the posterior nares, and accompanied by a copious acrid and fetid discharge from the mouth and nostrils. The tongue, at first of a dark red colour, its papillæ enlarged, soon became covered with black sordes, which also coated the lips. The lymphatic glands in various regions of the body were swollen and inflamed; those of the neck were swollen in every case; and sometimes the inflammation of these glands proceeded to suppuration and wide-spreading ulceration, extending into the pharynx and adjoining parts. Inflammation of the conjunctiva, with ulceration of the cornea, was noticed in some cases. Œdema of the integuments and effusion into the cavities were seldom met with. In one case hemorrhage from the nose, mouth, and intestinal canal occurred; and in all the worst cases the evacuations were of a black or dark green colour. The urinary secretion was suppressed in the beginning of almost every case; towards the close, however, it passed involuntarily. In one case, in which after death distinct degeneration of the kidneys was found, no albumen could be detected in the pale and copious urine; its sp. gr. was 1010.

The kidneys in almost every case were found enlarged, or acutely inflamed; but the granular or Bright's disease was not observed. The liver was paler than natural. In one case the spleen was observed of a yellowish colour, and infiltrated with pus. In another case, attended with swelling of the upper extremities, the glands of the axilla were found enlarged and containing pus. The lungs were free from disease. The pleuræ presented ecchymoses. Various pathological changes were found in the intestinal canal, *e. g.*, softening of the mucous membrane, ulceration of the mucous membrane of the ileum, paleness of the membrane in other portions of the intestines. In most cases the ileum and colon were of a dark colour, varying through several shades, from green to deep black.

The treatment, at first of a tonic character, was not successful; a change to small doses of calomel, as advised by some English authors, was found very serviceable. Subsequently when hemorrhages occurred, bark and acids were

employed. Nitrate of silver was applied to the local diseases.—*London Med. Gaz.*, Dec. 1850, *Zeitschrift für die Gesamnte Medicin*.

29. *Cretinism*.—A recent communication on this subject by M. Boudin, founded on the report of the Sardinian Commissioners, is published in the *Archives Générales*, September, 1850. This commission defines cretinism to be “a degeneration of the human species, which manifests itself in different parts of the globe, and characterized by idiocy, more or less pronounced, associated with malformation of the body.” It has been observed in Europe in the Alps, the Pyrenees, the Jura, the Hartz, and the Carpathians; in America, in the Cordilleras; in Asia, in the Himalayas; and in the mountainous districts of Tartary.

Sometimes the affection appears at birth, but generally no sign of the cretin appears till subsequently. The stature is seldom over four feet, many do not surpass three feet six. They are generally thin, with tawny skin, and a countenance expressive of a brutal deficiency of intelligence. The head is misshapen and out of proportion; the muscular strength is below par; the articulation imperfect. The cretin has few diseases; pellagra is, however, not unfrequent in the valley of the Po.

As far as the commission could gain information, season had no influence on the propagation of cretins. Other statistical facts, of more or less interest, are as follows:—

Cretinism declared itself—

Between birth and the age of 2 years	in 4,440
“ 2	“ 5 “ 187
“ 5	“ 12 “ 202
“ 12	“ 20 “ 31
Above 20	“ — “ 28

In goitrous cretins, the goitre commenced—

Between birth and the age of 2 years	in 2,333
“ 2	“ 5 “ 199
“ 5	“ 12 “ 419
“ 12	“ 20 “ 31
Above 20	“ — “ 28
Age not specified	“ — “ 711

3,912

In analyzing these and other tables, the commission have ascertained that hereditary influence is not powerful in the production of cretinism, as out of 8,000 families of cretins, not more than 300 parents were the subject of the malady.

In reference to the locality, the commission have established that deep, narrow, and tortuous valleys abound the most with cretins, and that the villages in which they reside are remarkable for the abundance of stagnant water. They have also made out that the water is highly charged with lime, and deficient in iodine and bromine.

The commission have determined that the eradication of cretinism is best effected by the following hygienic precautions: To drain the valleys; to cut down unnecessary trees, so as to allow a free circulation of air; to furnish a purer water; to insist upon houses being built on sanitary principles. To encourage a meat diet, and the liberal use of salt; to prevent, as far as possible, the marriages of cretins, scrofulous and rickety persons.—*Provincial Med. and Surg. Journ.*, Jan. 22.

30. *Causes and Cure of Goitre*.—The number of persons affected with goitre in France amounts to about four hundred and fifty thousand; the number of cretins is little less than thirty-five thousand to forty thousand. As there can be no reasonable doubt that both affections depend upon circumstances capable of being modified by hygiene, the French Government, following the laudable example of the Sardinian authorities, have appointed a commission to inquire

into the causes which may give rise to goitre, and into the best means of preventing or curing this unsightly disease. The following *resumé* of the opinions entertained by the commission may be useful to place on record, although it would seem that they have been rather exclusive in attributing the development of the malady to a single cause.

The first care of the commission was to construct a geographical map of goitre; to study the nature of the soils in which the disease is endemic; and to analyze the food, drink, &c., of such localities as compared with the aliments in neighbouring districts free from the complaint.

"It was soon ascertained that the existence of goitre bore no relation whatever to latitude, climate, elevation of residence, poverty, or other depressing causes; but the chemical examination of the fluids employed as drink lead to a remarkable conclusion. It is this: 'that goitre depends on the presence of magnesia in the food or drink, joined with the absence of a sufficient quantity of iodine to serve as an antidote.' These two conditions are essential for the development of the disease.

A mere inspection of the maps of localities affected with goitre, and of geological maps, suffices to prove that the disease prevails endemically in magnesian formations. This fact is admitted by the most distinguished geologists—M. Elie de Beaumont, in France; M. Studer, in Switzerland; M. de Sismonda, in Piedmont. In every locality in which goitre prevailed as an endemic disease, the commission found a notable quantity of magnesia in the substances used for food or drink. In certain localities infested by the disease, although the formation is not magnesian, a large proportion of magnesia was found in the water drawn from the wells, as at Neris and Landisay.

This general fact is further corroborated by others of a particular kind. In the goitre countries it is a common habit for young men, who desire to escape serving in the army, to drink several pints of a certain kind of water daily; they soon become attacked by the disease and escape the conscription. Now, these waters are strongly charged with magnesia. On the other hand, families, which take care to drink no other fluid than rain water, invariably escape; and it is well known that the water derived from the icebergs never gives goitre.

This latter fact has been applied in practice with the best effects. Many localities have been completely relieved from the disease by substituting the use of rain water for well-water. In the town of Montmeillan, for example, goitre has almost completely disappeared since the inhabitants have been induced to drink nothing but rain water.

A second important point established by the French Commission is, that a small portion of iodine, if taken daily with the food, acts as a preservative against goitre. Common sea-salt always contains a certain proportion of iodine, but not enough. From ten to fifty parts per thousand are required, and the commission are of opinion that, if this proportion of ioduret of potassium were mixed with the salt used for food in goitre localities, the development of the disease would be completely prevented. Of course, if the people could be prevailed on to drink nothing but rain water, the chief cause of the disease being removed, success would be much more certain. It is calculated that the general use of this ioduretted salt, in the goitre countries, would not entail an annual expense of 320*l*.

Dr. Grange, indeed, has employed this simple method with the best effects during the last eighteen months. Goitre has been banished from every family which consented to employ the ioduretted salt in a persevering manner. At the expiration of a few months, not a single individual remained affected, although every member of the family, from five years of age, had been previously afflicted with the disease. This is a most encouraging result, and a great triumph for medicine."—*Med. Times*, Nov. 16, 1850.

31. *Chloroform in Lead-Colic*.—Dr. ARAN has published, in the *Bulletin de Thérapeutique*, for Oct. 15th, 1850, the results of his experience in the use of chloroform as a remedy in lead-colic. The following are his conclusions:—

There can be no doubt as to the possibility of very soon curing lead-colic, by the internal and external use of chloroform. The advantages of this treat-

ment are striking. Lead-colic is eminently a painful affection; chloroform removes the pain. The disease is probably dependent on intestinal spasms, which tend to produce the characteristic obstinate constipation; chloroform calms the spasms. It does not, indeed, cause the lead to be evacuated from the system; but, by the employment of sulphur and alkaline baths, the skin is freed from the metal; and the same effect is produced on the intestines by enemata. No inconvenience is likely to arise when the evacuations are re-established slowly and with difficulty, from the use, for some days, of castor oil or some other mild purgative. Drastic purgatives frequently increase the colic, and even produce vomiting, when given before the pains are calmed and the evacuations re-established. Chloroform, applied principally externally, immediately calms the pains, and facilitates the use of purgatives, if it be found necessary to employ them.

The mode of external application, adopted by Dr. Aran, is to pour from one to two drachms of chloroform on a wet cloth, and keep it applied to the abdomen for a quarter or half an hour. He also gives it in mixture; and in enemata, preceded by a common injection. It is on the local application, however, that he seems to place most reliance. The enemata have sometimes appeared to increase the pain.

32. *On the Treatment of Itch.* By MM. BAZIN and BOURGUIGNON.—M. Bazin, physician to the St. Louis, in a recent report, furnishes an account of the trials he has made of the various means of treating the itch, and of the definitive results he has arrived at. He states that, at the time of his appointment in 1847, the medium time occupied in treating the disease by the *sulphuro-alkaline ointment* applied to the wrists and insteps, together with sulphureous baths and fumigations, was fourteen days; but that since he has caused the *entire body* to be well rubbed with it (rubbing with extra force those parts the acari specially infest), the patients are dismissed cured in two or three days. Some practitioners who have adopted the plan have erred in its application by leaving some portions of the body unrubbed, or by continuing the friction as long as any itching was perceived. In the first case the disease reappears; while in the other, by prolonging the frictions beyond the time necessary to destroy the acari, and the vitality of their ova, other eruptions are induced which give rise to great itching. This itching and eruption, occurring after the employment of two complete frictions, furnish an indication to desist instead of to continue; and if they do not then disappear, they may be relieved by tepid baths.

There are cases, however, in which, from the existence of great abundance of pustules, the sulphuro-alkaline ointment would excite too much pain, or in which the patients have such an invincible repugnance to its smell, that we should resort to some other substance; and M. Basin finds, by numerous trials, that the *lard* and *oil*, which form the base of all antipsoric preparations, if employed in general frictions, either together or separate, will effect a cure, only from four to six, instead of two, frictions being required. Another ointment recently tried, containing *chamomile*, cures in three frictions, soothes the itching instantly, and does not give rise to any secondary eruption. It is composed of equal parts of fresh chamomile, olive oil, and lard.

M. Bourguignon, in his recent prize essay, prefers the *staphisagria* to any other remedy. He adds 300 parts to 500 of lard, stirring the powder into the boiling lard, and keeping up a temperature of 100° C. for twenty-four hours. After straining, a little essence may be added. Baths should be taken before and during the treatment, and the frictions should be made four times a day, the cure being completed by the fourth day.—*British and Foreign Med.-Chirurg. Rev.*, Jan. 1851, from *L'Union Médicale*, 1850, Nos. 82, 135. *Journal de Chimie Méd.*, No. xi. p. 671.

33. *Disease of the Heart and Chorea.*—M. TROUSSEAU frequently points out to his class the correlation so often observed between disease of the heart and chorea; so that examination of this organ, and inquiry into the history of the case as regards rheumatism, should never be neglected. Such correlation supports the views of those who regard the disease as rheumatic or rheumatoid;

and indeed if this were not its nature, how can we explain that a disease which induces such marked disturbance of different parts of the nervous system, even to the intellect itself, should be so completely curable?—*British and Foreign Medico-Chirurgical Review*, January, 1851, from *Gaz. des Hôp.* No. 86.

34. *Sulphate of Zinc in Chorea.*—Whilst visiting the medical wards of Guy's Hospital, we have often noticed the success with which sulphate of zinc is administered in cases of chorea; and although we are aware that the profession have been made acquainted with the power of zinc in chorea by the able paper of Dr. HUGHES, in the *Guy's Hospital Reports* for 1846, we put the following cases upon record, that the continued good results of this mode of treatment might be extensively known. Before entering into details, we shall just quote from Dr. Hughes's digest a few facts connected with the use of zinc in the convulsive disease under consideration.

"*Zinc.*—This metal has been more largely administered than any other. In all cases, with the exception of two, which were successfully treated by the oxide, the sulphate has been in the form in which it was prescribed. The dose has been increased up to thirty-six grains three times a day. It has not often caused sickness. The stomachs of some persons, however, appear unable to bear it, even in small doses; and in others the organ rebels against the increase after a certain number of grains has been attained. Zinc was prescribed in sixty-three cases. Of these it effected a cure in forty-five, or seventy-one per cent.; it relieved in two; it failed to effect a cure in sixteen, or twenty-five per cent. In seven of the forty-five cases iron had previously failed; the zinc was given together with iron in one, and with the administration of electricity in five cases."

It will thus be seen how trustworthy a remedy is the sulphate of zinc in this disease; still, as chorea, independent of its connection with rheumatism, often arises from imperfect nutrition, it might be the case that the improved diet, rest, and comforts which the patients experience in the hospital, had some share in the amendment. We should not omit to state that we heard Dr. Golding Bird maintain in the wards, a few days ago, that zinc has a peculiar and specific influence on the nervous matter, in about the same manner as iron on blood.

The first case, the notes of which were taken by Mr. H. B. Wood, refers to a little boy eight years of age, very weakly and strumous-looking, who was admitted into Job Ward Oct. 11, 1850. He had had frequent attacks of croup, and never enjoyed robust health. About three weeks ago, whilst going to school, he was frightened by a bullock, and a few days afterwards he began to exhibit strange contortions of the body, which went on increasing in frequency and intensity up to his admission. The poor little patient was in fact constantly in motion, except when asleep. When examined, he was found very thin; skin hot and dry, and pupil dilated. The intellect was quite clear; the tongue red and injected, and protruded in a quick, sharp manner, but withdrawn quietly. The articulation was considerably affected. Pulse 76, sharp, very irregular in rhythm, with systolic murmur under the nipple. Respiration very irregular in frequency; bowels open; and appetite inclined to be voracious. The involuntary muscular twitches of all the extremities are constant.

Purgative doses of mercury with soda were administered, and a few days afterwards the patient had sulphate of zinc, galbanum pill, and extract of hyoscyamus, of each two grains, in the form of pill, one to be taken morning and midday. The sulphate was increased by half grains every other day, and on the sixth after admission the systolic murmur had decreased, and the movements were less convulsive. Wine was ordered on the fourteenth day, and on the seventeenth the patient was reported as improved in every respect; the heart's action was more regular, and the muscular contraction of the limbs hardly noticeable, except the patient became excited. On November the 3d, the twenty-second day after admission, the little boy was beginning to feed himself; the hands were getting steady, and the respiratory movements, as well as the action of the heart, more regular. On the thirty-ninth day he could almost command the use of his limbs, taking, at the time, eleven grains of the

sulphate per diem; and he was discharged December the 9th, about two months after admission, walking without any involuntary muscular contraction, and in good general health.

The notes of the second case were taken by Mr. Oddling. The patient is a little boy six years and a half old, who was admitted into Job Ward November 19, under the care of Dr. Addison. He is a child of fair, florid complexion, and light brown hair; has always enjoyed good health up to a month ago, when, having been sent to a shop with money which he lost on his way, he returned home very much frightened, and on the next day strange movements were first observed. We may mention in this place that fright has certainly a large share in the causes which produce chorea; and if we turn to Dr. Hughes's excellent paper, we find the following passage on the subject: "*Fright*.—It appears to be generally acknowledged in the profession, and it is very commonly assumed by parents, that fright is a very frequent exciting cause of chorea. As far as the table may be trusted—and as regards the particulars enumerated I believe it may entirely be trusted—this very common opinion appears to be correctly founded." The patient had never had rheumatism. We are aware that this is not the place for entering upon the consideration of the connection which has been traced between chorea, rheumatism, and heart-disease; but we shall just quote, from the *Guy's Hospital Reports* of 1846, Dr. Hughes's opinion on the subject. "*Rheumatism*.—Next to fright, rheumatism may be regarded among the most common causes of chorea. The connection between the two diseases has been often noticed, and the frequent concurrence of spasmodic affections with pericarditis, which, in the great majority of cases, is of rheumatic origin, has been particularly illustrated by Dr. Bright, and more recently by Dr. George Burrows. It appears at least doubtful whether, in most of such cases, there exists anything more than a sympathetic affection of the spinal marrow, seeing that after the removal of the rheumatic affection the chorea is usually curable by the same remedies which are found available in cases of chorea having a different origin." Dr. Hughes states that from his table rheumatism was the cause of chorea in the proportion of fourteen per cent.

On admission it was found that the head and all the limbs were constantly being tossed in every direction; there was difficult articulation, but the convulsive movements were pretty similar in amount on either side of the body. The mind was clear; the boy never had a fit; the respiration was normal; the tongue clean; the appetite good; bowels costive; and the urine normal. The first sound of the heart was accompanied by an abnormal bruit, but the rhythm otherwise regular, and the skin moist and supple.

Dr. Addison ordered a purgative dose of scammony and mercury, and soon afterwards one grain of sulphate of zinc, to be taken three times a day. On the third day the dose was increased to one grain and a half, and on the tenth day the convulsive movements had considerably diminished, the abnormal condition of the heart was disappearing, the general health being very good. The dose was now increased to two grains and a half three times a day. On the twentieth day the movements were but very slight, and the cardiac bruit had materially decreased; the patient now took four grains at the same periods. On the twenty-fourth day five grains were ordered; and on the twenty-sixth day after admission the boy was discharged without a vestige of choreic movements, though there was still a slight murmur accompanying the systole of the heart.

We lately noticed, in Job Ward, a third case, which has so remarkably improved, that we annex a short sketch of it from Mr. Wood's notes, though the little patient is not yet quite well. This boy is fifteen years of age, and was admitted under the care of Dr. Barlow, December 18th, 1850. He is the son of a stonemason; has been subject to ulcers on the extremities and pains in the head, but never had a fright, fall, blow, or rheumatism. For the last six months he has been engaged as waiter, with a great deal of work up and down stairs, never going to bed before twelve o'clock. He was at last obliged to leave his situation, with pains in the back and head, and difficulty of walking. His manner was at the same time altered; he would, without any apparent

cause, burst out crying or laughing, and make contortions in the face, which, with twitchings of the limbs, became worse and worse, the articulation growing indistinct at the same time.

On admission he was found to be a strumous boy, of light complexion, and vacant expression of countenance, the whole frame being affected with convulsive movements, which every second caused the whole frame to be tossed in different directions. The tongue was protruded with difficulty, and it was almost impossible to understand what the patient wished to say. The right side of the body is worse than the left, and when the boy is spoken to or looked at the paroxysms are frightful. Appetite voracious; slight pain in the head; skin hot, but pliable; pulse frequent and irregular; tongue injected round the edges, but creamy in the centre. The patient sleeps badly, but the action of the heart and lungs is healthy. After a smart purgative, Dr. Barlow ordered half a grain of sulphate of zinc to be taken three times a day. On the third day this was increased to one grain; on the eighth to two grains, and thus the doses were increased by one grain every other day. The boy is now taking five grains three times a day, and is almost well. As he was accustomed to take much malt liquor, Dr. Barlow allowed him a pint of porter per diem.—*Lancet*, Jan. 11, 1851.

35. *On the Treatment of Obesity.* By T. K. CHAMBERS, M.D.—That form of disease which commences at birth, and goes on increasing during infancy and childhood, is, I believe, so invariably fatal before the age of puberty, that I do not think we have reason for hoping that it is in any way amenable to medicine. At all events, I have not been able to discover any one whose experience has led him to pronounce it curable. It is a form of monstrosity; and as the subjects of it commonly display some other bodily malformation, and a deficiency of intellect, their death is a relief from a miserable prospect.

When it begins in childhood, or about the time of puberty, we must not be deterred by the circumstance of its being hereditary from attempting to remedy the inconveniences arising from it. We cannot truly reduce our patients entirely to the average size and weight, but we may enable them to pass life in comfort and usefulness.

The later the disease commences, the more controllable it is by management, until the middle period of life is passed, and then old age impedes in some degree the benefit which we may confer, not by rendering our measures inert, but by preventing our employing them quite so actively as we should have done earlier.

The first thing indicated in all cases is to cut off, as far as possible, the supply of material. Fat, oil, butter, should be rigorously interdicted in the diet table. But all eatables contain some portion of oleaginous matter, and especially those most convenient to advise the use of for a lengthened period. And almost all are capable of a transformation into fat, when a small quantity of this substance is previously present. It is desirable, therefore, that the mass of food should lie in the stomach as short a time as possible, in order that at least a fatty fermentation may not be set up in it. Very light meals should be taken at times most favourable to rapid digestion, and should consist of substances easy of solution and assimilation. To this end, the time of the meals should be fixed for an early hour in the day, before exertion has rendered the powers of the entrails languid and weak. Breakfast should consist of dry toast, or what is still better, sea-biscuit; and if much active exercise is intended, a small piece of lean meat. Dinner at one, on meat with the fat cut off, stale bread or biscuit, and some plain-boiled maccaroni, or biscuit-pudding, by way of second course.

Liquids should be taken, not at the meal, but half an hour after, so as not to impede the action of the gastric juice upon the mass. Here should end the solid feeding for the day; no second dinner or supper should follow, nor, indeed, any more meals be taken sitting down. A piece of biscuit and a glass of water can be taken standing up, if faintness is experienced; a cup of gruel or roast apple before going to bed.

This is not a scale of diet by any means unattainable. A butcher and re-

tired pugilist has adopted it for some years with the greatest comfort to himself. He is able, upon it, to work in the most violent manner in a small garden which he cultivates for himself in the suburbs. He has reduced himself from 20 to 17 stone; whereas his brother, who has not the same strength of mind, has increased to 23 stone in weight. Persons of more refined education ought, and often do, practice the same self-imposed restraint more easily. J. R. has reduced himself from 22 to 18 stone, and sometimes brings himself down to 17, but finds that he derives no particular advantage from being of the lower weight.

The smallest amount of nutriment consistent with the health of the individual can be found by experiment only; but we need not fear that ten ounces of solid food a day is too little, for the last-mentioned gentleman confined himself for a long period to that quantity, and found his mental and bodily powers always equal to the strain which the pursuit of a laborious profession in London demands. It may be remarked, by the way, that it is often advisable to add a small allowance of malt liquor at dinner, as otherwise the craving of the appetite is less easily appeased. The beers to be avoided are of course the thick, sweet kinds, but that which is thoroughly fermented, at a low temperature, in the Bavarian way, seems to contain very little injurious matter.

I do not know that any advice concerning sleep is peculiarly applicable to obese persons, beyond what we should recommend to all classes of men. A draught of morning dew, "*nocturni roris auram ante solis ortum bibendam*," which Aurelian prescribes for the corpulent, is equally beneficial to every one. They are usually uneasy sleepers, and though lethargic, by no means averse to early rising.

In cases where the fat is largely accumulated in the omentum, it is very convenient for the patient to wear a band round the abdomen, which may be tightened gradually. The support thus given to the abdominal muscles relieves the dragging sensation in the loins, which many persons, whose viscera are heavy in proportion to their strength, experience. It enables exercise to be taken with more facility, and appears also, by pressure, to afford some assistance to the absorption of fat.

The above remarks will apply equally to all forms of obesity; the abstinence recommended can be borne even by the aged, and only comfort be experienced.

As respects exercise, however, a distinction requires to be made. The young and vigorous, whose obesity does not prevent the use of their legs, cannot employ them more usefully than in walking as long as they are able. The greater number of hours per day that can be devoted to this exercise, the quicker will be the diminution of bulk. But as riding, by the gentle shaking of the abdomen, excites the secretions of the digestive organs more, it should, where practicable, be employed in addition. Where freedom of motion has once been gained, rowing, shooting, any or all of the forms of British gymnastics, should be adopted as regular habits.

But in the asthenic form of the disease, especially in elderly people, this is scarcely practicable. The defect in muscular power prevents the use of the limbs in walking for a long time enough to be advantageous. But where riding can be managed, it should on no account be omitted, and the suspensory belt before mentioned is often a valuable auxiliary to the employment of this exercise.

The ancients were much more in the habit than we are of using various forms of friction to the skin in treating chronic complaints; and we find in Aurelian a recommendation to the corpulent to employ dry rubbing, either with cloths alone, or with the addition of various powders. Modern habits of cleanliness supersede, in some degree, these remedies. But the skin is not unfrequently greasy from a thick sebaceous secretion, and the circulation through it languid in asthenic obesity, and in these cases horsehair gloves may be used with great advantage. Dr. Flemyng strongly advises friction to be employed to the trunk of the body as promoting absorption and invigorating the surface. The Greek additions of cold bathing or sponging, especially with sea water, the vapour or hot air bath, followed by rubbing with salt or with sand, and many other modifications of the same principle enumerated by Aurelian, will naturally suggest

themselves to every intelligent patient. The same author very sensibly advises these remedial measures to be employed fasting, and no food to be taken for some time afterwards, and modern habits render before breakfast a convenient time. To these rules of management, medicines, strictly so called, must be viewed as secondary and auxiliary. Unless these laws are obeyed, pharmacopœias are useless.

Purgatives I have generally found not needed in the plethoric form; the bowels usually act once or twice in the day. But in the asthenic obesity of *old people*, where the abdominal walls are weakened by long pressure of an unnatural weight, it is necessary to employ them.

But there is one class of medicines so universally applicable to *all* cases of obesity, that I think a trial of them should never be omitted. The chemical affinity of alkalis for fat point them out as appropriate alteratives in this complaint, and experience proves that they are suitable to the state of the digestive organs. The most eligible one is liquor potassæ, and it may be administered in much larger quantities than any other. If given in milk and water, we may safely commence with half a drachm and raise the dose to a drachm and a drachm and a half three times a day. The milk covers the taste of the potash better than any other vehicle. It has truly the advantage of saponifying a portion of the remedy, but there is no evidence to prove that its efficacy is thereby endangered; indeed soap itself has been strongly recommended. A physician, whose case is recorded by Dr. Flemyng, reduced himself, by Alicant soap alone, two stones in weight.

I have often given the above-mentioned doses of liquor potassæ (even to children in cases of scrofula and consumption) without any harm arising from its use, when taken, as desired, in milk. The fear of alkaline medicines has probably arisen from the injury observed by Huxham to follow the use of Mrs. Stephen's saponaceous mixture, at one time so popular, and therefore often misapplied. The injury appears to have originated from their having been employed in improper cases, such as debilitated gouty subjects, chronic stone in the bladder, and the like, to which, of course, much harm would be done.

A poor woman, who sold eggs in Chelsea, was becoming quite unable to gain her livelihood by her ordinary occupation. I have not kept a note of her weight and height, and therefore she is not mentioned in the table of cases, but she was extremely obese, and the cause of a variety of symptoms she complained of seemed traceable entirely to the accumulation of fat. By taking liquor potassæ only, without change of diet, she was reduced so far as to carry on her trade with comfort.

Another case was communicated to me the other day, of a gentleman who weighed 19 stone 7 lbs. By regimen, exercise, and liquor potassæ, he was reduced two stone and a half in six weeks.

I have mentioned bleeding, and perhaps that may cause some surprise, after the observations which have been made on the state of the circulation in fat people. But where distinct signs of plethora are present—such as pain over the eyebrows, beating of the temples, restless sleep by night, lethargy by day, with full lips and an elastic skin—it is capable of being employed with safety; and where it is employed, the advantage derived at the commencement of a course of treatment is very great, for it gives all the other remedies a fair start; and by affording immediate relief to many symptoms, gives the patient a favourable opinion of the plan he has undertaken.

On the other hand, it is scarcely necessary to say that much risk attends the loss of blood; for if the heart has become atrophied and weak, it will not stand the shock. Venesection may cause either sudden death, from failure of the heart's action, or effusion of blood in the brain, from disturbance to the circulation.

Bitter tonics are often of great advantage in enabling the stomach to digest more easily and rapidly, and therefore to be contented with a smaller quantity of really nourishing food. The increase of appetite which they cause does no harm; for when patients are getting better, they are usually more obedient to their medical man, and can be taught to control it. Gratitude for the benefit they have received makes them glad to follow advice, however hard.

Some medicines must now be mentioned, which have been recommended for the cure of obesity, but which analogy and experience do not approve.

Vinegar has been employed by those who are foolish enough to practice upon themselves; but as it produces thinness only by injuring the digestive organs the benefit is not worth the price paid for it, and no medical man would ever advise the use of such a remedy.

Iodine has been spoken of as likely to do good, from the power it exhibits of stimulating the absorbents in cases of scrofula and tumours. But its moderate use certainly does not cause the disappearance of healthy fat. Indeed it has been noticed by Lugol, and is matter of daily observation at our metropolitan hospitals, that patients frequently acquire a considerable degree of embonpoint during the time they are taking iodine. The cases of tumours and of fat are very distinct. As Dr. Pereira remarks, "The enlargements which these agents (mercury and iodine) remove, are not mere hypertrophies; their structure is morbid, and they must in consequence have been induced by a change in the quality of the vital activity; in other words, by morbid action. Medicines, therefore, which remove these abnormal conditions, can only do so by restoring healthy action." But the action which causes the deposition of fat in the adipose tissue is, though excessive, of a healthy nature, and harm, rather than benefit, is to be expected from the medicine under discussion; that harm which always accrues from a valuable remedy wrongly employed.—*Lancet*, 1849.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

36. *Case illustrating the Difficulties of Diagnosis of Morbid Growths from the Upper Jaw.* By PRESCOTT HEWETT, Assistant-Surgeon St. George's Hospital. (*Proceedings of Royal Medical and Chirurgical Society*, Dec. 10, 1850.) [The following case is not only interesting as illustrating the difficulties of diagnosis in morbid growths from the upper jaw, but also from the discussion to which its reading gave rise, having elicited the opinions of some of the most eminent men in the profession, relative to the use of anæsthetics, the patient having died on the table, and his death having been caused, there is reason to believe, by the chloroform administered. Though long, we republish the report entire as given in the *Lancet* (Dec. 28), and bespeak for it an attentive perusal.]

The patient, a man aged twenty-five, was admitted into St. George's Hospital, under the care of Mr. P. Hewett, in May, 1848, with a large tumour, of an irregular shape, occupying various regions of the left side of the face. Presenting every appearance of having originated in the antrum, this tumour was found in the front and back part of the cheek, in the temporal fossa, in the orbit, and in the nostril, extending to the back part of the pharynx; round in shape, but lobulated; it was firm and elastic to the touch, perfectly movable, and, in the nostril, of a dead white colour and glistening appearance. The skin, conjunctiva, and mucous membrane of the nose were quite healthy, and no enlarged glands could be detected in any part. The history of the case was, that six years previous to his admission into the hospital, the patient was troubled with a disease, supposed to be a polypus of the nose, which had been easily removed with the forceps; subsequently, however, the cheek began to swell; and the tumours gradually made their appearance in the regions in which they were found; all this had occurred without pain, and with very little inconvenience. A year ago caustic had been extensively applied in two different places, large cicatrices making the spots. This treatment had produced no effect on the disease, and no fungating growths followed the application. At different times, there had been extensive bleedings from the nose, which had somewhat reduced the patient. At a consultation of the surgeons of the hospital, it having been resolved that, in all probability, the disease was of the fibrous kind, and connected with the antrum, the removal of the upper jaw was decided upon, Dr. Snow, to whom the surgeons of St. George's are so much indebted for the able manner in which he for a long

time administered chloroform at the hospital, having kindly undertaken to give it on this occasion. The patient being seated in a chair, the operation was performed in the usual manner; but, on removing the superior maxillary and malar bones, it was discovered that the disease was not connected with the upper jaw—it was altogether behind it. The larger portion of the tumour was dissected from off the pterygoid process, to which it was firmly attached. Those portions which were in the orbit and temporal fossa were removed without difficulty, being for the greater part simply connected with some very loose cellular tissue. The patient, having become faint, was placed in the horizontal posture, and a small quantity of stimulant administered, after which he soon rallied. The portion of diseased structure in the back of the nostril was then removed with a strong pair of curved scissors. The pulse having again failed, the patient was at once laid on a bed and carried into an adjoining room; different restorative means were made use of, and he appeared to rally somewhat; but shortly afterwards, as the breathing became embarrassed, an opening was at once made into the crico-thyroid membrane, and, as a last resource, an attempt was made to carry on artificial respiration with a tube; but every effort proved of no avail—the patient soon died. But few vessels were met with during the operation, and no great amount of blood was lost. Little or no bleeding followed the incision in the neck. The details concerning the administration of the chloroform are given in the following letter from Dr. Snow. A careful examination of the bones removed during the operation showed that, in the superior maxillary, the antrum was all but obliterated, the posterior wall of the sinus having been forced, by the tumour lying behind it, against the anterior one; there was merely a chink left, the cavity of which was quite free, and lined by healthy mucous membrane. The malar was much more curved than natural. The structure of both bones was perfectly healthy. The tumours were of a purely fibrous character. At the dissection of the body, it was made out that the tumour had originated in the roof of the left nostril, its main point of attachment having been to the under part of the body of the sphenoid and inner surface of the pterygoid process. Portions of diseased structure were still found in the sphenoidal sinuses, as well as at the upper and back part of the septum nasi. Some loose bits were also found deep in the temporal fossa, and at the back of the orbit. These were lying in the cellular tissue. They were all connected to each other by slender pedicles, one of which passed through a hole in the perpendicular portion of the palate bone; that in the orbit had reached this situation by creeping through the speno-maxillary fissure. The bones were throughout healthy in structure. The tissue of the growth was purely fibrous. The trachea and bronchial tubes, even to their minute ramifications, contained a quantity of frothy blood. The structure of the lungs was crepitant throughout, but each section presented numerous small, dark spots of ecchymosis, produced by some of the air-cells having been also filled with blood; these organs were otherwise free from disease. The heart was healthy; its cavities contained small black clots, but the greater part of the blood was thin and fluid, and did not coagulate on exposure to air. The other viscera were quite healthy. In his remarks, Mr. Prescott Hewett principally drew the attention of the Society to the great difficulties which at times were found to exist as to a correct diagnosis of the precise region in which a tumour of the upper jaw had originated. Of these difficulties, the present case afforded a good illustration. The history of the patient, and the various regions in which the tumour existed, had led to the conclusion that the disease, having sprung from the antrum, had gradually burst through some of the walls of this cavity, and thence spread to the spots where it was found. The operation and the subsequent dissection proved, however, that the antrum had not been the starting-point of the disease. Mr. Prescott Hewett had little or no doubt that the morbid growth had first begun in the nostril, and had subsequently reached the pterygo-maxillary fossa, either by making its way through the speno-palatine foramen, or by breaking down a portion of the palate-bone; once in the fossa, the progress of the tumour may easily be traced; it passed into the orbit through the speno-maxillary fissure, and, in the face, it had in some parts made the bones yield, and in others it had so completely moulded itself to their

shape, creeping over their cutaneous surfaces, that the outlines of the bones were scarcely discernible. Mr. P. Hewett's remarks were altogether confined to tumours of a fibrous character. The morbid appearances observed about the lungs led Mr. P. Hewett to ask the question whether the administration of chloroform was advisable in operations about the mouth, where there was likely to be a certain amount of bleeding. He had no doubt that the blood found in the lungs had got there by passing through the glottis, and he doubted very much if such would have been the case had no chloroform been used. Many surgeons, fearing this accident, had of late not failed to condemn altogether the use of chloroform in these cases; but some, being unwilling to submit their patients to such serious operations without it, had adopted a middle course, administering this agent in the first steps of the operation only, hoping thus to avoid all risk. It remained still to be proved, however, whether, even with this precaution, there might not be danger in using anæsthetics in some operations about the mouth.

Mr. FERGUSSON said that the case was interesting in a variety of respects. It served to illustrate the difficulty of diagnosis in cases of this description. It was evident that the greatest care had been bestowed in investigating the nature of the case; every consideration had been given to it—as, indeed, no one could doubt on looking to the characters of the surgeons who had given their opinions about it; nevertheless, the disease proved to be somewhat different from what had been expected. It was supposed to have been a disease of the superior maxillary bone, but so far as he (Mr. Fergusson) could make out, it was only connected with that bone by lying in apposition with it. From the description given of the tumour, he should have supposed it to be a tumour of the antrum; and, indeed, had it not been for the very accurate description given by Mr. Hewett, of the compressed and altered condition of this cavity which was observed lying in front of the tumour, he would have concluded that it must have originated in this part. In a practical point of view, there was one feature deserving of special notice. In the description that had been given of the case, he (Mr. Fergusson) had not noticed any allusion to the shape or form of the front part of the superior maxilla. All that was said was that it seemed to be perfectly normal; that there was not any distortion of the alveolar ridge, the teeth, or the nostril. This would have led him to think the tumour deep-seated, as in most cases of tumour in the antrum it expands as much in front as at the back part. When there is not any alteration in shape or distension, in the front part of the superior maxillary bone, especially the alveolar stage, the greatest caution should be used in deciding on an operation, because the tumour, in all probability, would be deep-seated, as in the present instance. He confessed that, in the absence of the particular changes in the alveolar process, to which he had referred, and from the circumstance that the tumour had extended towards the orbit, and upwards and outwards, so as to involve the zygomatic ridge and fossa, he (Mr. Fergusson) should have felt some hesitation in resorting to an operation. What had occurred here served, perhaps, to show more conspicuously the difficulties connected with such cases. There were many other points, with reference to the pathology of this disease, which he would not then allude to, as they had been already, on former occasions, discussed in that room. With respect to the influence of chloroform, he (Mr. Fergusson) had operated very frequently since its introduction, in cases of this description, and some of these operations were very protracted; yet chloroform or ether had been used in these cases, and its application repeated when its anæsthetic effect seemed to be wearing off; and he had never met with any bad results, or anything which would lead him to believe that it might prove injurious. When chloroform was first introduced, he formed the opinion that it ought not to be used in these cases, because the blood trickling down the throat might perchance enter the larynx, and perhaps produce irremediable mischief. He had himself refused to operate in one case wherein it was proposed to give ether, but experience had since taught him that in these there was but little reason to dread mischief from that cause. He even had had cases in which the blood had trickled into the larynx, and yet no harm had resulted. He would wish to ask Mr. Hewett how long the operation had lasted, for a pro-

tracted operation of this kind might exhaust even a strong man. In such a case as this, all the circumstances should be carefully weighed, before the fatal result be attributed either to the operation or to chloroform.

Mr. HEWETT, in reply, said that the first part of the operation lasted for eight or ten minutes, the bones being easily separated. Taking the period of fainting, and the conclusion of the operation, the proceedings from the commencement did not exceed twenty minutes.

Dr. WEBSTER inquired whether the blood of the patient was fluid and black-coloured after death; or, if bubbles of air were found in the cavities of the heart or veins, as in cases where chloroform was employed in surgical operations, and which terminated fatally, these appearances were almost invariable? An answer to these would assist in forming a correct opinion whether or not the patient's death was in consequence of the chloroform employed to produce insensibility.

Mr. HEWETT said that the blood was dark-coloured, and fluid. No air was observed in the heart. He believed that if the patient had died from the chloroform, it was by suffocation, and not as chloroform acting specifically as a poison on the mass of the blood.

Dr. SNOW said that he could not agree with Mr. Hewett that the chloroform had any share in causing the blood to enter the windpipe of this patient. In the first place, there was no difficulty of breathing during the operation, nor for some time afterwards. It only came on just before death, which took place after the influence of the chloroform had altogether subsided. In the next place, he had administered chloroform in several other operations for the removal of tumours, both of the upper and lower jaw, and there had been no symptoms, in any instance, of blood having entered the lungs. He exhibited chloroform, almost every week, in operations about the mouth and nostrils, in which there was a good deal of bleeding—such as the operations for epulis, for nasal polypi, and for hare-lip, and cases in which a number of teeth were removed at once, and yet in no instance had blood got into the lungs. The operation for hare-lip, when the infant was laid on its back, with its head in the lap of the operator, perhaps put the glottis to as severe a test as any operation. He had administered chloroform, in nearly twenty cases, with the child in this position, since Mr. Hewett's case occurred; and he had also seen the operation performed in this way several times, in King's College Hospital, without the chloroform. There was a good deal of spluttering, whether this agent were employed or not, but in neither case did any symptoms of blood having entered the lungs ever supervene. He had performed some experiments in relation to this subject. In one of these, a kitten having been made so insensible that it did not flinch on being cut, was immersed over head in tepid water, coloured with logwood, and allowed to remain half a minute. During this time it moved its ribs in the attempt to breathe, but did not draw in any water, for it recovered readily from the chloroform after being withdrawn; and being then killed, its trachea contained no froth, and was not stained by the logwood. Flourens had pointed out, on the introduction of the inhalation of ether, that the functions of the nervous centres were abolished under its influence, in the same order as in asphyxia; and this was equally true of chloroform. But it was not found in asphyxia, by submersion, that a person began to fill his lungs with water as soon as he became unconscious; on the contrary, but little water was drawn in even during the last gasps which took place as he was dying. Indeed, as the glottis was an organ of respiration, it was to be expected that it would retain some amount of sensibility as long as breathing continued. As the blood, in Mr. Hewett's case, seemed not to have entered the windpipe by the wound made after death, in order to perform artificial respiration, it must have entered just before, when the patient was in a state of collapse, and moribund. There were spots of ecchymosis in the lungs, as he witnessed; but the quantity of blood was not enough to cause death so soon, although it might have produced ill effects, had the patient survived. With regard to the fluidity of the blood in the deaths caused by chloroform, he thought that it was probably due to the artificial respiration which had been employed, for he had not found the blood quite fluid in one animal out of a great number which he had killed with that agent.

MR. HENRY CHARLES JOHNSON had assisted Mr. Hewett in the operation under consideration. Now, it was suggested that the death might be accounted for in three ways, each distinct from, and unconnected with chloroform. First, the patient might have sunk from the length of the operation; secondly, he might have inhaled the blood during the existence of the syncope; and thirdly, the blood might have trickled through the wound in the trachea, and thus have produced suffocation. In answer to the first of these suggestions, he would reply that the operation was not longer than is usually the case in similar proceedings; the first steps were rapid, and the operation was only suspended during faintness: including the second part of the operation, the whole proceeding was not so long as is frequently the case in operations about the face. He thought this disposed of the first suggestion. With respect to the second suggestion, he was not aware of any case, where, in consequence of syncope during, and collapse after an operation, blood passing down the throat had found its way into the windpipe. Thirdly, the operation of opening the larynx was performed when the patient was expiring; the opening was made rapidly; there was scarcely any blood at all, and he believed none had escaped into the wound. Now, had chloroform any influence in producing the fatal result? For his own part, he had, since the occurrence of this case, abandoned chloroform in all operations about the face. Whether chloroform did or did not facilitate the admission of blood into the trachea, might admit of some difficulty of solution; but of this we were sure, that in the case before us, in which chloroform had been used, blood did get into the trachea and down the bronchial tubes, and death was the result.

MR. BARLOW was certainly quite under the impression that the man's life was destroyed by chloroform. It seemed far more reasonable, far more agreeable to the actual circumstances, to suppose that such had been the case than to conclude that death had been owing to the operation simply. It was gratifying to hear Mr. Fergusson state that he had removed the upper jaw so frequently, where chloroform had been given, without any bad result; this might happen, and yet some degree of risk have attended its administration. Six cases might do well, but the seventh might be followed by the issue of Mr. Hewett's. Looking to the effects of chloroform on the glottis and respiratory muscles, which could in no wise be moderated often, he doubted the propriety of chloroforming the patient in such an operation as that described; for a fatal case had happened in spite of the skilful administration of the anæsthetic agent, and an operation performed with as little delay as that case allowed of. There was no fault attaching to the giver of the chloroform; they were discussing quite another question. He thought the inquiries of physiologists deserving of some consideration in reference to the general operation of an extremely powerful agent. He had often experimented therewith, and he knew of nothing which so extraordinarily affected the muscular irritability; the high irritability of the batrachia was destroyed by it with a wonderful swiftness. In the case before them, blood appeared to have flowed through the glottis, because it was inirritable; the patient could not eject it, because coughing was impossible, so that he was endangered doubly. Mr. Barlow concluded by requesting his distinguished friend, Dr. Marshall Hall, to favour the Society with his valuable experience of the operation of this agent upon animals.

DR. MARSHALL HALL observed, that he had listened with the deepest interest to the details which had been read to the Society, which he thought was under great obligations to the author for bringing forward so interesting a case, involving so important a question as that of the administration of chloroform; for it was this, in its largest sense, to which the communication gave rise. He (Dr. Hall) had performed a vast number of experiments on the effects of chloroform on the animal economy, and if he had been asked the question relative to its probable effect on the human subject before it had ever been administered to it, he should have said that its administration would be attended with the utmost danger. He believed that he might declare, that the effects of chloroform on the animal system, by inhalation or imbibition, are displayed, first on the cerebral, secondly on the spinal, and thirdly on the ganglionic systems, respectively, in relation to time. It required the utmost skill to *limit* its opera-

tion to the first of these; and if its influence extended to the second, there was danger, from the failure of respiration; and if to the third, there was sudden death, from the cessation of the circulation. The transition from one of these stages to the other was apt to be sudden, and unexpected dissolution was the terrible consequence. This event had taken place in the human subject; it had been then referred to unsuspected disease of the heart or lungs, but in this opinion he had no confidence; in experiment, the same unsuspected event has occurred. We remember the occurrence, in a lecture by Mr. Brande, at the Royal Institution. That gentleman having placed a guinea-pig under the influence of chloroform, it fell on its side. The lecturer is reported to have said, "The animal will speedily recover from this momentary debility;" but it never did recover! He (Dr. Hall) had seen the same unexpected death repeatedly. And yet it was said that many hundreds, nay, some thousands, of patients, had been placed under the influence of chloroform at St. Bartholomew's Hospital without a single fatal result. The hospitals of St. George and of St. Thomas had been less fortunate. Still it was marvellous how few accidents had occurred. This he ascribed entirely to the extreme caution and skill with which this dangerous agent had been administered, and much credit was due to those praiseworthy members of our profession who have devoted themselves specially to this responsible task. It was not in hospitals, however, but in private practice, that, from the want of equal experience, the danger of administering chloroform was greatest. It was accordingly in private practice that fearful events had most frequently taken place. In general, he believed the fatal result had occurred from the influence of the chloroform on the ganglionic system and the heart. In the case before the Society, it was obviously from affection of the spinal system and defective reflex or diastaltic closure of the larynx. This orifice became paralyzed in its excitability and in its contraction, and the blood present in the mouth was drawn into the larynx and bronchial tubes, inducing asphyxia. That the affection took place in the order he had mentioned was obvious from the simplest experiment. If a frog were inclosed in a tumbler inverted over a plate, and exposed to the vapour of five drops of chloroform, it soon ceased from voluntary, and then from respiratory movements; afterwards the circulation failed. He might also remark, that, tried in this manner, chloroform was a far more dire and active poison than even hydrocyanic acid. There was no question, he thought, that the vapour of chloroform was more dangerous than that of ether, and he had often wondered that it should have been preferred as an anæsthetic agent. Before he sat down, he begged leave to communicate a fact of some interest to the Society. The fellows would doubtless remember the case of amputation read to it some time ago, said to have been performed during a state of anæsthesia induced by mesmerism. It was argued by him, at the time, that the reported perfect immobility of the patient proved too much. Volition being removed, there ought to have been reflex movements. He understood that the man had since confessed that he acted the part of an impostor!

Dr. COPLAND remarked that one circumstance had not been, he thought, sufficiently noticed by the speakers: he alluded to the question, whether the shock of an operation was greater or not, and more or less dangerous, when chloroform was administered. He believed that the shock was greater, and the danger increased when chloroform was administered; he believed that the reaction which followed an operation when no chloroform was given was salutary and advantageous to the patient, and thought the shock was greater when you deadened sensibility in any way. In the case under discussion, it was not known whence the blood in the bronchi had originated. Now, when death occurred from chloroform, the lungs were congested, and the blood in a fluid state. Chloroform relaxed the small vessels, and hence we might explain the presence of the blood in the bronchi and air-cells, by supposing it to have been an exudation from the lining membrane, consequent upon the twofold cause of a relaxed condition of the capillaries, and an unusually fluid state of the blood.

Mr. TRACY said, in this case it appeared, from the statements of all who were present, that the man rallied from the syncope. Now he never heard of, or saw, a case in which such reaction took place, when chloroform destroyed the

patient. Was the death attributable to the influence of shock? In no case, he believed, did blood get into the lungs in operations about the teeth and face when chloroform was used.

Dr. ADDISON said that, in a fatal case which he saw, death was preceded by the cessation of hemorrhage from the part under the knife; the heart having become remarkably enfeebled, and having ceased to beat. On what grounds did Dr. Snow declare so confidently that the patient did not die of chloroform?

Dr. SNOW said that there was no room to suppose that the patient had died from the influence of the chloroform, for, at the beginning of the operation, when the insensibility was greater than at any subsequent period, the patient was only in what he termed the third degree of narcotism; and the fourth degree, in which there is relaxation of the muscles and stertorous breathing, could be induced with perfect safety, and was often seen in operations. Mr. Barlow had stated that there appeared no other cause for this patient's death than the chloroform; he (Dr. Snow) considered that there were sufficient causes. The operation itself was one which the surgeon considered dangerous under any circumstances, and thought it his duty to explain that danger to the patient. In this case it had to be undertaken in a subject blanched by previous loss of blood; and again, unusual difficulties were met with during the operation: the tumour could not be all removed, oozing of blood continued, and the wound could not be closed; consequently the operation might be considered, in some sense, as lasting to the time of death. There was also the shock arising from pain, which was altogether prevented, only in the early part of the operation, in this case. Of all the operations that he had seen, during the three years that he had constantly attended St. George's Hospital, this appeared the most formidable, and the patients having recovered from the immediate effects of all the other operations, under ether and chloroform, it seemed hard upon the latter agent that it should be blamed in this case.

Dr. WEBSTER apologized for repeating his question, respecting the morbid appearances noticed in the blood; as he considered them essential in deciding whether death was produced, in the case under discussion, by chloroform or otherwise. In most of the patients acknowledged to have died from the employment of that agent, air was met with in the heart or veins, whilst the blood was always fluid and black coloured. Undoubtedly, a person might sink from so severe an operation as the one performed by Mr. Hewett, and which was somewhat similar to a case under the care of the late Mr. Liston, where the patient never rallied from the shock, but died very soon afterwards, although chloroform had not been employed. This might also have occurred in the present instance; but he (Dr. Webster) thought, notwithstanding the arguments used, and the explanations made that evening, the death of the individual whose history has been now detailed to the Society, was chiefly owing to the anæsthetic agent employed, and not from the operation, however severe.

Mr. PRESCOTT HEWETT replied that no air was found in the heart, and the veins were not examined in reference to the point.

Mr. CHARLES HAWKINS said that conflicting opinions respecting such a case as this prevented younger surgeons from arriving at any conclusion respecting the employment of chloroform in this class of cases. He had seen Mr. Hewett perform this operation, and he never recollected to have seen a patient die so soon after an operation. Patients were rarely, indeed, carried away from the operating table merely to die. The case was more like one in which sudden death resulted from the escape of air into the veins. He would inquire, then, what really was the cause of death in this case? Mr. Fergusson did not attribute it to the chloroform, as he had performed the same kind of operation in six cases since this one, under that agent. He (Mr. Hawkins) had been surprised to hear Dr. Copland express his opinion that the shock of an operation was greater under chloroform than without it. He had always thought the contrary to be the case. If, however, Dr. Copland was right, his opinion offered another argument against the use of this agent. He had seen a patient die suddenly from the shock occasioned by the passage of a bougie.

Mr. CÆSAR HAWKINS said that it was natural for Dr. Snow to throw off the blame from the chloroform; but he (Mr. Hawkins) would remark, that there

could be no kind of reflection cast upon the operator; for all who had witnessed the careful and scientific manner in which Dr. Snow administered this agent would be sure that every precaution as to safety would be taken. Now, he believed that the death resulted from the presence of the blood in the larynx, and that this blood would never have found its way into that passage unless chloroform had been administered. It was a very rare accident, and offered no sufficient reason why we were to abandon the use of chloroform. Notwithstanding what Dr. Marshall Hall had said respecting the dangerous character of this agent, it had been employed in St. Bartholomew's Hospital in 6000 cases, and in St. George's Hospital from its first introduction into practice most extensively, and yet this was the first case in either hospital in which mischief had resulted from its employment. No doubt, chloroform was a strong poison, and in St. George's Hospital it had never been given, he believed, as in St. Bartholomew's, in petty operations, such as drawing a tooth, &c. The only places, he believed, in which deaths had resulted from chloroform were the Borough hospitals, two deaths having occurred in Guy's and one in St. Thomas's. In these cases he believed that the chloroform was administered by inexperienced persons, and not, as in most other hospitals, by an operator of Dr. Snow's acknowledged ability and experience.

Mr. SOLLY said that the fatal case which had occurred in his practice had been published by him in all the medical journals. It was quite true that in St. Thomas's Hospital no one was appointed to give the chloroform, but still the effects of the agent upon the patient were watched by a competent person. In his case the surgery-man had certainly held the chloroform, but a dresser watched the patient, and all at once said, "The pulse is flagging." The patient died almost immediately. He thought chloroform killed by paralyzing the heart. In Mr. Hewett's case, he thought the loss of blood produced syncope, and the chloroform so paralyzed the heart as to prevent reaction, and the patient died. In two operations for removal of the upper, and one of the lower jaw, which he had performed, he had relied on the heart recovering from the syncope, to get rid of the effects of the loss of blood, and should not give chloroform when much loss of blood was likely to result from operation. Did Mr. Hewett's patient inhale the chloroform sitting or lying?

Mr. HEWETT.—Sitting.

Mr. BENJAMIN PHILLIPS said that there seemed amongst the speakers to be very great difficulty in arriving at any satisfactory conclusion respecting the cause of death in Mr. Hewett's case. But surely every gentleman present must be aware of the fact, that cases of the kind were by no means of uncommon occurrence before ether or chloroform were employed in surgical operations. A great many cases were on record, where the patient died during the operation; they were as inexplicable as this case, but they did occur when no chloroform had been employed.

37. *Results of the Use of Chloroform in 9000 cases at St. Bartholomew's Hospital.* By Mr. SKEY.—One of the most interesting questions connected with the subject of operative surgery relates to the use of anæsthetic agents employed for the purpose of suspending the function of sensation. This question has assumed a moral, as well as a medical type. It has been urged, that sensation is a natural function of the living organism, and that to suspend it by artificial agency is to set at nought the ordinances of nature; and that man is born to suffering, as evidenced by the sensibilities of his body. If the soundness of this argument be admitted, it would be difficult to draw a line which would define the boundary at which moral and *immoral* suffering meet; or to say, in what form of suffering our remedial agents may be justifiably resorted to. The sensibilities of our frame are not given us by nature to the end of promoting pain, but to enable us to avoid it. Corporal suffering is no part of the discipline of the mind; nor can it even be generally asserted that its excess exercises a salutary influence on the character. Every movement of our body instinctively points to the avoidance of bodily suffering; why, therefore, should we not as readily and unobjectionably employ the agency of anæsthetic medicines for the purpose of suspending bodily pain, under the circum-

stances of an otherwise painful operation, as we endeavour to mitigate the bodily suffering of any other patient cast down on a bed of sickness? Will not the objection to the anæsthetic action of opium to a region affected by a neuralgic pain, or to the system generally, hold as strongly as that of another agent of the same principle given to avert the pain of an operation?

The medical arguments against the use of anæsthetic agents have a somewhat better foundation. That great and sudden determination to the brain, and an unnatural circulation of venous blood, result from their employment, is undeniable.

It is undeniable, if the quantity administered be large, and long continued, that symptoms resembling those of apoplexy present themselves, in the form of extreme congestion of the vessels of the face, stertorous respiration, and total insensibility; and it cannot be denied that occasionally its full administration leads to headache, vertigo, and languor of some days duration; and cases are recorded in which death itself has followed in the course of an hour or more after its employment. It must be observed, however, in pursuing this question in strict accordance with the laws of evidence, that we have no *proof*, in the cases above referred to, that death was the direct effect of the supposed cause. The parties administering it were not fully experienced in the mode of its application. They entertain the *opinion* that death was referable to it, while it cannot be disputed that the fatal issue may be attributable to other causes: and, in one example, it appears more reasonable to refer the death of the individual to a suspension of the function of respiration by violence, than to any obnoxious agent circulating through the lungs, or brain. On the other hand, the records of St. Bartholomew's Hospital point to its successful administration in upwards of 9000 cases; in not one of which, including the aged and the young, the healthy, the infirm and the asthmatic, has its employment left a stain on its character, as an innocuous agent of good. Under all circumstances, its careful employment may be unhesitatingly resorted to in all cases, excepting only such as are marked by determination to the brain of an apoplectic type; secondly, under circumstances of great and serious exhaustion from loss of blood; and, thirdly, in diseases of the heart. In these conditions of the system, it is perhaps better avoided.

The agent in general use is chloroform, and one word may be added as to its administration. It appears indisputable that its influence on sensation precedes that on consciousness. I have employed it on several occasions, in which a patient has been conscious of all that has been passing around, and yet who has declared himself to have been totally insensible to pain. This state of his system has arisen from the moderate use of the agent, ample, indeed, for all purposes of utility, though somewhat difficult to regulate in quantity sufficient for the required object.

I prefer its gradual administration. I do not think it desirable to exclude atmospheric air, employed as a diluent during the process of inhalation. Its influence should be gradual, not sudden. I consider its application through the medium of a cambric handkerchief laid on the face, preferable to the use of instruments made for the purpose of excluding atmospheric air, and food should be rigidly avoided before its administration, otherwise sickness will frequently follow.

Against the occasional convictions or objections of others to its employment, I place the strong, and to my own mind the unanswerable fact, that it has been successfully used in so large a number of cases in St. Bartholomew's Hospital since the period of its introduction; that these cases have been indiscriminately taken, and that its objections have not yet made their appearance before the observant eyes of the medical staff of that institution, either by promoting danger during the operation, or protracting the recovery of the patient after it. In one class of cases its employment is especially applicable, viz., in that form of disease in which the pain of an operation is the chief warrant for its non-performance, and in which the recovery from a chronic disease is left to nature, that might be greatly hastened by the hand of art; such, for example, as the removal of a piece of dead bone.

Up to the period of the introduction of chloroform, a surgeon was very un-

willing to subject a patient to the painful process of sawing and chipping away portions of dead bone, with a view to reach the medullary cavity, because the operation was both a painful and a protracted one. The consequence was, that an hospital bed was occupied by a patient thus affected, for many months, to the exclusion, perhaps, of three or more claimants, who would have successively occupied it. But by the aid of chloroform the operation is now performed unconsciously to the patient, and the period of his recovery greatly abridged. With the three exceptions above mentioned, I cannot hesitate in strongly recommending its administration in all cases of large surgical operations; believing its discovery to be the greatest blessing conferred on the profession of surgery during the last century; and although I have seen its employment pushed, on many occasions, apparently to the verge of apoplexy, I cannot say, even in such examples, that the good has not largely predominated. — *Operative Surgery.*

38. *Pathology and Treatment of enlarged Subcutaneous Bursæ.*—We have given, in a preceding department of this number, the anatomical account of these structures by Mr. Wm. COULSON, and we insert here his observation on the pathology and treatment of them, extracted from the *London Journal of Medicine* for January last.

A correct knowledge of the situation, volume, form, and position of the superficial or subcutaneous bursæ, will, on most occasions, enable the surgeon to appreciate the character of a tumour due to an increased secretion of the fluid in the interior of these sacs, to a thickening of their walls, or to an inflammatory action set up around and within their tissues. The symptom which naturally first attracts attention is the existence of an oval, colourless, elevated swelling, in an unusual situation. Should the surgeon happen to be ignorant of the previous existence there of an original bursal apparatus, for the protection of the integuments and for facilitating motion, he is at first lost in conjectures as to what the swelling may be. This has often happened. But, aware of the existence of the superficial bursæ, and of the localities which they constantly occupy, the first glance at the case not unfrequently reveals to him all he requires to know. I need not therefore dwell on this symptom, remarking merely that the tumour may be small or large, movable, colourless, or deeply inflamed; or occasionally ulcerated on its surface, and discharging pus and serous-looking fluids; or, by long neglect and the influence of time, it may appear as a firm unyielding tumour, without fluctuation or elasticity.

Even when uncomplicated, the enlarged bursæ occasionally, though not uniformly, give rise to symptoms meriting attention in a history of these affections. A certain amount of inconvenience is often felt, varying in intensity with the volume, situation, and condition of the swelling. The enlarged anconal bursa, for example, may attain a considerable size, and yet give rise to no more inconvenience than a slight sense of weakness after fatigue; even the patellar bursa may be enlarged without proving troublesome to the patient. But in others, and these, perhaps, form the majority, it is otherwise. Those in the hand, especially the carpal, cause a great sense of weakness; they are unseemly, and the deformity becomes so unpleasant to the patient, as to induce him to request the removing of the swelling at all risks. In like manner, those over the malleoli deform the foot, and cause other inconveniences. Much lameness often accompanies the enlarged patellar bursa; whilst the enlargement of the bursa over the first joint of the great toe produces not unfrequently the most intense suffering. Inflammation and suppuration follow; and death has been known to supervene from such a course, when injudiciously interfered with by the surgeon. Generally speaking, then, the symptoms indicating the presence of an enlarged bursa are sufficiently well marked to lead to a correct diagnosis.

A knowledge of the course of the tendons will enable the surgeon to discriminate between the enlargement of a superficial bursa, from that more troublesome and dangerous affection, the enlargement of the deep or profound; and he will regulate his treatment accordingly. Of these I do not speak at present, confining my remarks wholly to the system of the superficial bursæ. These swellings, then, interfere with the free use of the limbs in which they happen

to occur. The integuments may inflame and suppurate, and in this condition the case may for the first instance be brought to the surgeon. If neglected now, they cause intense suffering. The cause of the pain is not uniformly the same. In the enlarged bursa over the great toe, for example, considerable pressure may be endured, provided a corn has not happened to be induced by that pressure over the enlarged bursa. When this happens, the pain becomes intolerable, and is seemingly disproportioned, if I may say so, to the other symptoms and appearances; but it is well to know this, for the partial removal of the corn by the knife will often give immediate and great relief. A very usual symptom is a tingling sensation running down the limb, often attended with tenderness on pressure.

The position of the enlarged popliteal bursa necessitates a careful diagnosis; it may be mistaken for abscess, or for other still more dangerous affections. It is sufficient merely to caution the surgeon on this point.

The detection of the enlarged bursæ in the axilla, and in the groins, and the discriminating them from other diseases will occasionally require great attention on the part of the surgeon.

Enlargements of the superficial bursæ have frequently, no doubt, been confounded with encysted tumours; their sequelæ also present difficulties in the way of a correct diagnosis, to be overcome only by a careful observation and history of the case.

Enlarged bursæ may be either simply enlarged, or the enlargement may be accompanied with inflammation and all its usual appearances. Erysipelas may arise in the course of the disease; or at least, œdema of the superficial fascia or cellular layer, in which the bursæ are situated.

Pathology.—The morbid anatomy of this system of organs has not been made the subject of any extensive researches. What has been observed amounts to this: the contained fluid, which in health merely bedews the surfaces of the sac, increases in quantity and alters more or less in quality. Originally, perhaps, more complex than chemists suppose (such at least seems to have been the opinion of Schreger), it may undergo further changes, as a result of chronic or acute inflammation. At times, the fluid resembles the outer layer of the crystalline lens, or the vitreous humours; that is, it partakes more of the character of a semi-solid than of a liquid; at other times, it is much more fluid, or it is more serous, obviously less abounding in albumen.

The semi-fluid substance has sometimes a yellowish appearance; at other times a reddish hue; sometimes it is very fluid, of a dark, dirty colour, the product, no doubt, of an inflammatory action. The sac may be wholly obliterated, or its walls so greatly thickened and condensed as to represent a solid tumour; or the enlarged bursæ may show a dropsical character, with softening of the inner membrane, perforations, and enlargement of the traversing tendinous cords. The absence of many of these bursæ may depend, no doubt, on their obliteration in early years from blows, pressure, or other accidental violence.

The morbid appearances found in connection with the enlarged bursa of the great toe have little or no reference to the smaller bursa itself, but to the deformity caused by the simultaneous displacement of the metatarsal and digital bones of the toe. Nevertheless, when, by a separation or spreading out of the distal end of the metatarsal bones, the head or extremity of the first metatarsal bone becomes so prominent on the inner side of the foot as to be mistaken for an osseous tumour, the integuments passing over it become much attenuated in those cases where the deformity occurs in the adult. If congenital, or occurring in early years, no such attenuation happens. The bursa itself, on dissection, presents a variety of morbid appearances, according to the progress made by the displacement of the metatarsal bone, and of the phalanges of the toe. The ligaments also undergo changes, but I cannot say that I have ever observed the formation of accidental bursæ amongst their fibres. Fungous growths have been seen growing from the inner surface of enlarged bursæ; and ill-conditioned sores are also sometimes present, depending partly on the nature of the surfaces affected, and partly on the constitution of the patient.

Causes.—A variety of causes likely to produce enlargement and subsequent

disease of the superficial bursæ, have been stated by systematic writers. Unfortunately, however, by confounding these organs with the deep bursæ and synovial sheaths of tendons, or by a meagreness of detail, many otherwise interesting observations have failed to improve our knowledge of the disease. The formation of accidental bursæ I have shown to be, in every instance, doubtful, whether on the prominent part of the spine in deformities of this column, or in any other part of the body. The inflammation and enlargement of the bursæ over the great toe, happen how it will, is merely an enlargement of a bursa already existing there, and not a new formation.

Enlarged bursæ are frequently ascribed to severe pressure, sudden or long-continued, to blows, or other external violence; and to such a cause, no doubt, many cases may be traced. At other times, bursæ enlarge wholly independent of any such causes. It has been usual to speak of the enlarged patellar bursa as "the housemaid's knee," of the enlarged anconal bursa as the "miner's elbow," etc.; but many cases of enlargement of the bursæ cannot be so explained. Thus, then, they not unfrequently originate without any assignable cause. It has been said that corns and bunions (diseases very opposite in their nature, though, strangely enough, associated in surgical works), and enlarged bursæ, ganglions, and tumours, are much more numerous in the rich than the poor; of this, however, I have my doubts. The mechanical causes assigned for the production of the enlarged bursa over the great toe, and for the deformity of the foot, so frequently preceding re-enlargements of the bursa, and giving rise to it, can be distinctly refuted. I allude more especially to the theory that such deformities and diseases are caused by tight shoes.

It merits notice, that those who stand out most for the efficacy of mechanical causes in the production of such diseases, have uniformly avoided offering any explanation of the circumstance, that the disease I have just alluded to (enlarged bursa in the deformed foot), appears first not unfrequently in one foot, and is even confined to that foot, be it right or left; but if a rigid shoe were the producing cause, both feet ought clearly to be affected simultaneously. Again, when enlarged bursæ occur, which cannot be traced to any mechanical injury, it not unfrequently happens that they occur at once in both limbs; this need not surprise us, as the laws of symmetry go far to explain the occurrence. Some have carried the idea of the production of enlarged bursæ by accidental causes so far as to include under the same category the actual formation of the healthy sacs, creating the system whose nature I now describe. They have also found bursæ in situations where I cannot say I have ever observed them; namely, around corns, and between these semi-horny productions, and the true skin: but no such productions exist so far as my observations go, nor are they required to explain the intense suffering arising from the pressure over a corn. The wedge-shaped body is at that moment slowly, but surely, growing inwards, piercing the true skin, and tearing its delicate structures asunder. Take off the pressure, or remove the offending wedge, and the pain ceases.

Treatment.—It has been shown that many of the subcutaneous bursæ of the body are occasionally wholly absent, or, in other words, never were present. In this sense, then, they are not essential structures, at least not in these persons. But it has also, I think, been proved that such bursæ, when enlarged, may be obliterated by pressure, or the same result may be affected by pressure and puncture combined; or by inflammation, suppuration, granulation, and consequent adhesion of surfaces; or, lastly, when, losing their original character, they have attained, by means of fibrinous deposits, the appearance and nature of a solid tumour, they may be extirpated by the knife, and so altogether removed. These considerations, aided by a sound anatomy and physiology, which we owe chiefly to Schreger, have led me to the adoption of a simple mode of treatment, applicable to most, if not to all cases, of enlarged bursæ.

Let me first suppose, that a case of enlarged bursa, unaccompanied with any other affection, no matter where placed, presents itself; that of the great toe need form no exception; an enlargement of the natural patellar, anconal, or malleolar bursa; the question arises, how is it to be treated? Abundance of evidence exists to show, that the treatment by rest and pressure, simple friction, blistering, friction with mercurial ointment, iodine, etc., all but uniformly fail in effecting a permanent cure.

When these fail, recourse is had to a puncture, which, made with a lancet, amounts generally to a short incision; or an incision, more or less extensive, is made into the enlarged bursa, the contents evacuated, and pressure applied. This method, no doubt, succeeds; but it is unnecessarily severe, and is not unattended with danger, even in the uncomplicated class of cases. But it not unfrequently happens that, before the surgeon has seen the case, inflammation of the integuments, and of the superficial fascia in which the bursa lies, has set in, with more or less severity. Now, in such cases, the modes of treatment alluded to are clearly inapplicable, and have occasionally been attended with very serious results.

Mr. Key, in an excellent memoir on ganglia or bunion, distinctly refers to a case in which death happened from the incautious interference of the surgeon. He is speaking of the enlarged bursa on the great toe, which complaint, when complicated with the peculiar deformity I have already spoken of, he calls bunion. "I have known," he says, "gangrene of the foot and death ensue from opening an inflamed and suppurating bunion; and in three cases, exfoliation of the bones, with a most tedious and painful suppuration of the surrounding structures." He condemns all interference in such cases, in which opinion I coincide, although maintaining very different views, as to the nature of the affection, from those of the distinguished surgeon whom I have just quoted.

The mode of treatment which I prefer to all others is simply puncturing of the enlarged bursa with a grooved needle, such as is used for exploring tumours and swellings of doubtful character. After the evacuation of the contents, pressure is applied by means of soap-plaster and bandage; this is renewed from time to time, and puncture of the sac repeated if necessary. The result is uniformly a permanent and safe cure. If to this we add the almost painless nature of the operation, we have in this mode of treatment all that is satisfactory to patient and surgeon.

When the enlarged bursa becomes seriously inflamed, we should endeavour, by rest and other means, to subdue the inflammation; nevertheless, a puncture such as I have described may be practiced, even in these cases, with advantage to the patient.

In a case of anconal bursa, accompanied by high inflammation, I punctured the swelling with a grooved needle; pressure was employed; no bad results followed, and the patient recovered. Miss M., æt. 50, applied to me, October 18th, with an enlargement of the bursa over the right olecranon, the skin being highly inflamed. The inflammation had existed for ten days, and became so severe as to compel her to seek advice. I punctured it, and two teaspoonfuls of dirty-looking serous fluid came out; pressure was applied, and at the tenth day she recovered.

Sometimes the integuments over the bursa ulcerate, and under these circumstances pressure may also be employed, as in cases of simple puncture. In cases of long standing, when the enlarged sac has put on the appearance of a sarcomatous tumour, excision is no doubt the remedy, having a due regard to the integuments. The mode of treatment by the seton has been strongly recommended by many good surgeons, and I have myself adopted it with success; but a more enlarged experience has convinced me that this mode of treatment, besides being a tedious and unnecessary process, is not on all occasions unattended with danger. I think it only applicable to those cases where the question arises as to their destruction by the seton, or removal by the knife.

The following interesting cases were communicated to me by my friend, Mr. Cocks, of Hatfield, who has kindly permitted me to publish them.

"I had," says Mr. C., "for several years, an enlarged bursa on the second joint of the left thumb, produced by a blow on the fore part of the saddle, in checking the bridle of my horse. It became as large as a pea and was rather annoying and unsightly; I punctured it with a lancet, when a pinkish crystalline mass came from it; pressure was applied, and it healed. It soon grew again, and again, and the same operation was repeated. But, tired of this plan, after opening it, I rubbed the inside with a camel's-hair brush, dipped in a solution of nitras argenti (4 grs. to 3j of water). In a few days, it suppurated; the lining membrane sloughed away; it soon healed, and has been so for more

than a year. The next case was under my son. A servant girl, from London, had a very large bursa on the left outer ankle, just below the end of the fibula, stretching across the dorsum of the foot, about two inches long, and at least an inch wide. She had applied to several medical men in town, all of whom advised, 'nothing to be done.' It was opened by my son; solution of nitrate of silver was injected into it, and pressure by compress and bandage applied. In a few days, the greater part of the sac was obliterated; the fluid (which in this was limpid) collected in the non-adhering portion. The same treatment was applied to this part, which was followed by considerable swelling of the foot and leg. The inflamed leg was treated with cold saturnine lotion; but a warm poultice was applied to the tumour, in order to bring on suppuration as soon as possible. The case went on favourably; and in three weeks she was able to go about quite well."

No cases of enlarged bursæ have attracted more attention than that of the great toe; when painful and enlarged, it is difficult to treat, for reasons I have partly explained. So much confusion prevails in surgical works, as to the true nature of the proper method of treatment of this troublesome bursa, when enlarged and inflamed, that I may hope to be excused, if I again direct attention to it. The bursa situated on this part may become enlarged and painful, like any other superficial bursa, and require, for its relief and cure, the treatment I have recommended. But that which, in a peculiar manner, complicates the pathology of this enlarged bursa, is the accidental deformity caused by a projection inwards of the digital extremity of the first metatarsal bone. The phalanges of the great toe itself turn outwards to such an extent as to overlap, or pass under, those of the second—a deformity, in fact, amounting to all but complete dislocation. As the metatarsal bone recedes more and more from the second, the digital extremity seems to enlarge, causing a remarkable prominence inwards of this part of the foot.

In the mean time, as the deformity increases, the bursa is placed daily under pressure, more and more severe; the same shoe no longer fits the form of the foot, now much broader in the distal extremity of the metatarsal region; the bursa enlarges, and becomes extremely painful. A succession of bursæ form on the same spot; they open, and perhaps suppurate; and cases are stated to have occurred in which the joint itself has been laid open, and caustic applied to the inner projecting portion of the metatarsal bone, as if it were of morbid growth.

The disease, then, in its most aggravated form, that is, when complicated with this deformity, consists, simply, in an inflamed bursa, generally produced by pressure, with a partial dislocation of the great toe, mainly dependent on a displacement inwards of the digital end of the metatarsal bone. As these two affections are quite distinct, though often confounded, I need not here inquire as to the causes giving rise to the deformity. It will be sufficient to observe, that tight shoes, or rather shoes no longer fitting the altered form of the foot, however they may give rise to an enlargement of the bursa, in no case produce the deformity; for it is now universally admitted that the deformity is most frequently congenital, or comes on in very early life; that it occurs in hundreds who never wore shoes or boots, and that, even when present, it does not necessarily give rise to enlarged bursæ. The cases which most frequently come before the surgeon occur in persons who get the deformity after the meridian of life. The deformity takes place as a result of the weakening of those structures binding together the metatarsal bones; the larger one recedes from the second, and the muscular forces, acting on the great toe, assist in adding to the deformity, by causing it to approach the others. The treatment of such complex cases is exceedingly difficult. It is here that rest, in the recumbent posture, becomes absolutely necessary; the inflammation must be subdued, or allowed to subside. Should a corn have formed on the enlarged bursa, it had better be cautiously pared down, as the skin has probably become much thinner over the bursa. When the foot has become tranquil, other questions arise as to the treatment, chiefly bearing on the form of the shoe; a boot, properly made of very soft leather, such as is worn in France, may be used without aggravating the complaint. Shoes, I apprehend, are bad, as they necessitate a

somewhat tight ligature over the instep; this causes intense pain immediately below it, or nearer to the toe. In time, the integuments may and do become accustomed to the form of the foot, and the bursa no longer enlarges. This, I think, is the ordinary course of events, even in cases by no means unfrequent where the deformity has proceeded to its greatest extent. When the deformity is natural to the person, the bursæ do not naturally enlarge, and therefore give little or no trouble.

39. *Treatment of certain cases of Hare-lip.*—[E. A. LLOYD, Esq., in a clinical lecture on surgery, lately delivered at St. Bartholomew's Hospital, related the two following cases of complicated hare-lip, which were highly interesting from the successful application of a new mode of overcoming the difficulties met with in some complicated cases.]

CASE I.—*Hare-lip, with a large portion of the superior maxillary bone projecting through the fissure, cured by operation.*—The child, Eliza Fisher, was admitted in Sept. 1849, during the time I was absent from town, and when Mr. Paget was attending to my patients in the hospital. On my return she was handed over to me in a most emaciated state, perfectly pallid, and with patches of eczema impetiginodes on different parts of the face and body, with diarrhœa, very little appetite, and altogether in such a miserable state that no one would have been justified in performing any surgical operation at that time.

A large portion of the superior maxillary bone was projecting through the cleft of the lip; not perpendicularly in the natural position of the bone, but turned upwards and forwards, and projecting horizontally, in a direction nearly at right angles with the normal position of the teeth. The fissure extended through both hard and soft palate. The state of the child's health was at that time so bad that it was little expected there would ever be an opportunity of performing an operation. But, in a short time, by the employment of appropriate medicines, the diarrhœa was checked, the condition of the stomach improved, the appetite increased, and the cutaneous disease subsided. The cod-liver oil was freely administered, and, in a few weeks, the health of the child was so far improved, and it gained so much flesh and strength, that it was considered means might be commenced to obviate the deformity without any risk. Before uniting the fissure in the lip, it was necessary to get rid of or change the position of the projecting piece of the superior maxillary bone. The practice in this hospital has hitherto been to cut off the projecting part; but this plan leaves a gap in front of the bone which is never filled up, and which remains a deformity for the whole of a patient's life, and interferes materially with the power of articulation.

In order to obviate this inconvenience, it was attempted to push the portion of bone back into its proper place, by keeping continual pressure on it by means of a pad. This plan was tried for several weeks, but it failed entirely. I then determined to forcibly break down the piece of bone with a strong pair of forceps, to bend it into the gap, and leave it to become fixed there. This was easily accomplished, the soft parts having been previously divided. A small compress of lint was placed over the part so as to confine the bone in its new position, and kept in its situation by means of adhesive plaster.

No bad symptom whatever followed this operation, and the piece of bone was easily retained in its new place, and in about a fortnight it became firmly fixed there. By this means the gap in the superior maxillary bone was entirely filled up. The ordinary operation for hare-lip was now performed; viz., the edges of the fissure in the lip were pared, and the two even surfaces were brought together in the usual way with hare-lip pins.

There was some considerable difficulty, however, in doing this, for the nose was twisted; also one side of the fissure in the lip was much longer than the other: so that in order to adjust the edges properly, it was necessary to pare the edge of the shorter side of the fissure in such a manner as to make the raw surface of a convex form; thus leaving a surface on the shorter side of sufficient length to unite to the whole of the longer edge of the fissure.

The uppermost hare-lip pin was discharged by ulceration on the third day, which resulted from the great force required to bring the parts into contact at

the time of the operation; and in consequence of this a small aperture was left.

The other pin was allowed to remain two or three days longer; and when it was removed the two raw surfaces were found to have firmly united below, but the aperture left by the ulcerating out of the upper pin still remained. The edges of this aperture having healed, it became necessary to detach the cuticle from them, and then bring them into contact as in the first operation.

I have always found that strong liquor potassæ is the best caustic to apply in these cases, for the purpose of detaching the cuticle; and in this case it was applied. The two raw surfaces were kept in contact by means of a long strap of adhesive plaster passed all round the head and above the ears, the two ends being crossed over the wound in front.

It is necessary to pass the plaster all round the head, otherwise it will frequently slip, and thus fail in keeping the two sides of the cleft in continual contact with each other.

I have never known this plan of treatment fail in any case. In a few days the aperture was perfectly closed, and the child left the hospital, not only cured of its unsightly deformity, but likewise in the enjoyment of a good state of health.

Ol. jecoris aselli was continued with marked benefit during the whole of the time.

The next case I will relate to you was certainly the most unsightly instance of this deformity I ever met with, and one in which the plan of breaking down the projecting piece of bone, instead of cutting it off, was perfectly successful; and a most satisfactory cure was the result.

CASE II.—*Double Hare-lip, with the central portion of the superior maxillary bone so elevated as to make a right angle with the rest of the jaw, cured by operation without cutting off the bone.*—In this case, which came under my care at the hospital a few months ago, a portion of the superior maxillary bone, about half an inch in breadth, with a portion of the lip attached to it, was projecting upwards and forwards, at right angles from the natural position of the bone, carrying with it the septum nasi, and thus elevating the nose in an extraordinary way, the alæ nasi being at the same time widely spread out.

This elevation of so large a portion of the front of the face caused a deformity so hideous that the "human face divine" was scarcely recognizable. So dreadful, indeed, was this deformity, that to remedy it by any operation was almost despaired of.

But I determined to make the attempt, even in this case, feeling assured that all cases of hare-lip, however bad they may be, can always be considerably relieved by operation.

I therefore strongly advise you to operate in all cases that may be placed under your care.

This child was also in a most emaciated state; it was brought up entirely by hand; the nature of the deformity rendering it impossible for the child to take any of its food in the natural way.

As the means most likely to afford support and strength to the infant, cod-liver oil was given at first, in doses of one drachm, three times a day: but it was, after a week, increased to two drachms. This having been continued for three weeks the child's health was so much improved, that I determined to break down the projecting piece of bone.

I should tell you that, during the whole of this time, Mr. Ayre, one of my dressers, on whose diligence and attention I can most implicitly rely, had attempted, by slight pressure continually applied, to press down the projecting piece of bone; but this was of no more use than in the case I have just related to you. I first dissected up the central portion of lip from the projecting piece of the bone, and then with a strong pair of forceps broke the bone, and forced it down into the gap. After this was accomplished, a pledget of lint was placed on the broken piece and confined there by means of sticking-plaster carried round the head and face, so as to prevent the bone from again projecting, having previously raised up the piece of lip which I had detached.

The bone having, in a few weeks' time, become firm in this position, I ope-

rated on one side of the lip in the usual way, and brought the edges together by one common suture and one hare-lip pin. There was not room for two pins.

This operation was quite successful, and in about three weeks I determined to operate on the other side. Here a difficulty presented itself, the edge of the fissure on one side being much longer than that of the other, the shorter side being that of the central portion of the lip. The pairing, therefore, of this edge was carried to a certain distance round the lower extremity. By this means the two raw edges were made of the same length, and brought accurately into apposition.

The edges of the cleft readily united, and the patient is now quite recovered, and, instead of being a hideous object, is now a really good-looking child. The nose, too, which was flattened at first, is at present much more prominent.

The child will be brought to the consulting room to-morrow, when you may have an opportunity of judging for yourselves of the success of the operation.

I never saw so much projection of the bone as in this case.

In cases of very young children, I recommend you always to try pressure for some time when the bone is projecting. It may not unfrequently be reduced by that means, and, in proof of this, I could, if it were necessary, adduce many cases.

On no account cut off the projecting piece, for, although the highest authorities have recommended that practice, I feel convinced that it is quite unnecessary, and that by so doing you will render the articulation of the patient imperfect for his whole lifetime; and, in many instances, much deformity will result, from the falling in of the lip, there being no support for it.

Although, indeed, by the removal of the part, you accomplish your object in one operation, that slight advantage should not be considered when the patient's comfort for life is at stake.

We frequently see persons who have been operated on for hare-lip, with a small V-shaped cleft remaining at the bottom, when the paired edges have not united. This, I imagine, arises from the parts retracting below the lower needle, and not being kept in contact long enough to enable them to unite. I therefore advise you, in order to obviate this, in all simple cases of hare-lip to make both the raw surfaces of a concave shape; and by this means you will leave a sufficient quantity below the lower needle to allow for a certain degree of retraction, without a gap in the margin being left. This mode of proceeding I have followed in the hospital for many years.

There is another plan which I have also sometimes adopted to prevent a notch remaining in the lower margin of the lip. I leave portions of what I slice from the edges of the fissure attached to the inferior angles of the fissure; turn them down with these raw surfaces opposed to each other, and confine them in that situation. By this proceeding, instead of a notch being left, the central portion of the margin of the lip may be made to project. It is many years since I first had recourse to this proceeding.

Sometimes the edges of the fissure are so far apart that it requires great force to bring them together, and in these cases they will not readily unite. It is therefore necessary to separate the parts very freely, and far back on either side; and I have met with cases in which the deficiency of lip has been so great that there was no possibility of keeping the edges of the fissure sufficiently in contact without making a perpendicular incision on each side of the lip, commencing at the outer side of each of the *alæ nasi*. By this means you will always be enabled to bring the edges so easily together that they will readily unite. The incision should not be carried through the membrane of the mouth, but merely through the common integument and muscles. It will sometimes suffice to make an incision on one side only. This cut generally heals readily, and little or no mark remains.

When the surfaces have not united, although the pins have been taken out or have discharged by ulceration, the edges may be readily kept in contact by a long narrow piece of plaster, bound round the head in the way I have described.

Bandages of various kinds have been recommended for this purpose, and

were formerly much used in this hospital ; but I think the plaster a far more certain application, as it is less likely to slip, and is much more easily applied.

The coronary artery will sometimes bleed very freely, but it should never be tied, for the presence of a ligature would necessarily impede the healing process, and thus render the cure more tardy. But it is of course of great importance to lose as little blood as possible in all operations on children. I therefore always pass the pins through the two sides of the lip as quickly as possible, and then draw the parts together by the twisted suture, without wasting any time in trying to stop the bleeding, for that will always cease when the parts are thus brought together.

With regard to the age at which this operation is best performed, there has been great difference of opinion ; but, so far as my experience goes (and I have operated as early as three weeks and as late as the twenty-first year), I do not think, in simple cases, it makes much difference. In the more complicated cases, the operation should always be performed at the earliest period.

I should, however, avoid, as far as possible, the period between six months and two years, because dentition is then going on. As a general rule, I think that the earlier you operate the better ; for the most successful case I ever had was in a child, as stated above, only three weeks old.—*Medical Times*, Feb. 1, 1850.

40. *Excision of the Head of the Femur*.—MR. HAYNES WALTON read a paper on this subject before the Medical Society of London, December 14, 1850. After remarking upon the diversity of opinion concerning the propriety of this operation, the author said, the leading question was, at what stage of the disease the operation should be performed. There were two considerations to be taken into account: 1, the local ; 2, the constitutional. With reference to the first, he thought, when the discharge was excessive, thin, dark, and of bad odour ; in respect to the second, when there was much hectic fever. If, on examination, disease of the internal organs could not be discovered, especially of the lungs, the operation should take place. There was a question whether disease would not sooner or later come on in these from the effects of the local disorder upon the constitution, if the local mischief were not removed.

The author did not consider the acetabulum to be so often diseased in morbus coxæ as the head of the femur ; and that, when diseased, it had greater power of reparation.

He believed non-dislocation of the head of the femur to be diagnostic of soundness of the acetabulum ; and that, by exploratory incision, or by passing the finger through a sinus, the state of the acetabulum might often be discovered. If there were no disease in the acetabulum, the operation would most probably be successful, although cases had turned out well where there had been disease in that portion of the joint. Out of fourteen cases, twelve of which had been collected from different sources—the other two having occurred in his own practice—six had proved fatal: one had died from renal disease, another from hemorrhage from the profundic vein, another from diarrhœa: the cause of death in the other three was not given.

The operation was in reality much less severe than it appeared to be: the wasted state of the parts facilitated the operation, while the loss of blood was remarkably small.

The author did not advocate removal of the trochanter as well as the head of the bone. The long interrupted splint was the best apparatus to apply after the operation.

MR. B. TRAVERS gave great weight to the opinions of Cooper, Cline, and Hunter, all of whom were averse to the performance of the operation in question. He thought that confidence should be placed in the reparative powers of the body, and that, if the case were really curable, the operation would not be required. Even if the operation were successful, the limb was of but little service. From all he had read, heard, and seen, he was of opinion that the successful cases would have got well without interference with the knife. The specimen that had been handed round showed attempts at reparation had been made in those where the operation had succeeded.

Mr. DAMPIER agreed in the main with Mr. Travers.

Mr. CLARKE did not consider a case to be cured even if the patient lived twelve months after the operation, and that death was hastened by the operation.

Mr. CHALK spoke of the difficulty of diagnosing this disease from lumbar and psoas abscess, and questioned if the disease were removed with the head of the bone.

Mr. GAY could not coincide with Mr. Travers; the process of reparation in bone was so tardy that the knife should be employed to assist nature, and that by its use much constitutional irritation could be spared the patient. He would not advise the use of the knife when the manifestation of scrofulous disease was very active.

Mr. H. SMITH mentioned the result of some successful cases. One, a boy, æt. 13, operated on in 1845, was now hearty and active, and could walk from Holloway to London. Another, operated on two years ago, a female, æt. 13, was seen yesterday by him, and found in a very comfortable condition, and could walk a mile without assistance. Both were Mr. Fergusson's cases. Another (Mr. Morris's of Spalding) case, operated on in 1849, was quite well, had perfect motion with the thigh, and could walk a short distance.

He had seen mistakes made concerning the position of the head of the bone, and the operation given up in consequence after the first incision had been made. The operation was advisable, because, by preventing ankylosis, the mal-position of the limb was obviated.

Mr. LLOYD had paid considerable attention to the operation in question. In some cases, but very rare ones, the operation was to be performed: he had seen patients who had died from the effects of the profuse suppuration solely; no disease could be found in the internal organs. He thought that most cases of the disease commenced as synovitis, and not from scrofulous deposit in the head of the bone, which latter cause of disease he looked upon as unfrequent.

Mr. COULSON was of opinion that hip disease was generally of a scrofulous origin, and as amenable to constitutional treatment; that the operation should be put in force at the last stage of the disease, when all hope of recovery by other means was given up; that the constitutional disturbance was not due to the local malady, but both had the same origin.

He stated that four post-mortems at the Margate Infirmary had shown the acetabulum to be extensively diseased. In respect of the cases brought forward by Mr. H. Walton, he thought the operation should not have been performed in many of them.—*London Medical Gazette*, December, 1850.

41. *Case of Ovariectomy; Spontaneous Disappearance of Ovarian Tumours.*—GEORGE NORMAN has recorded, in the *Provincial Med. and Surg. Journal* (Jan. 8th, 1851), an interesting case of ovarian tumour, in which he attempted extirpation, but was unable to succeed in consequence of extensive adhesions, and also alludes to some very interesting cases of spontaneous disappearance of similar tumours.

The subject of the case was twenty-three years of age. When admitted into the United Hospital, 19th Sept., "the tumour appeared to be nearly as large as the head of a child at birth; it was quite movable in the abdomen, and appeared to be attached below by the broad ligament of the uterus, for no doubt was entertained of its being a tumour of the right ovary. It was firm to the touch and gave no sense of fluctuation; her general health had much given way; she had pain extending over the abdomen, and at times severe cramps in the bowels; a fold of vagina protruded full two inches beyond the external pudendum, even when in the recumbent position, and she had endeavoured in vain to keep this up by a pessary before her admission. It was with great difficulty the os uteri could be felt; after a considerable examination, it was found under the arch of the pubes. She was kept in bed, took iodide of potassium, and used iodine frictions to the abdomen, still the tumour increased in size and the pains in intensity.

"The case was considered, by my colleagues and myself, to be an ovarian tumour, and that if ovariectomy were ever advisable, this patient's case was one

calling for it. The prolapsed state of the vagina, the weight of the tumour, and the continued pain, rendering it impossible for her to do anything for her support; the tumour was increasing, and there seemed to be no hope of its growth being arrested. It was agreed that she should discontinue all remedies for a fortnight. At the end of that time her general health had not improved and the tumour appeared to be as large as the impregnated uterus at the fourth, or between that and the fifth month. I then explained to the patient the nature of the disease, told her that an operation had in some instances been successful in the same disease, but that the risk was great and the result doubtful. She replied that she had expected I should make the proposal to her, that she had quite made up her mind, and was ready to undergo the operation whenever I thought proper. A delay, however, occurred from her expecting to be unwell in two or three days, and it was not desirable to operate at or near that period. She became unwell, and after ten days the operation was fixed for the 8th of November. She left off meat for a few days before, and took a mild aperient. Fires were kept for two or three days in the operating theatre, and also in a small ward adjoining it, where it was intended she should remain after the operation, and where she was directed to go to bed the morning of the intended operation.

"At twelve o'clock on Friday, the 8th of November, Dr. Davies, who kindly undertook to manage the administration of chloroform, put her fully under its influence in her bed, apart from all those assembled in the theatre adjoining. In a state of perfect unconsciousness, she was brought into the theatre, and kept in that state during the whole time she remained there. An incision was made in the linea alba, about five inches in length, commencing an inch above the umbilicus, and avoiding that, it was extended downwards towards the pubes. The periosteum was raised with a pair of forceps, and opened to nearly the same extent; instead of any part of the tumour appearing, several convolutions of the small intestine protruded; these with some little delay were returned into the abdomen with great adroitness, by my colleague Mr. Gore, and retained there. During that time, I had ascertained that the anterior parietes of the abdomen adhered very considerably, and firmly, to the tumour on each side of the incision; also that the adhesions below were considerable, and apparently insurmountable, and it was then discovered that a portion of the small intestine, full two inches in length, adhered firmly to the anterior part of the tumour. All hope, therefore, of removing the tumour being gone, no time was lost for the purpose of ascertaining its precise nature, but the integuments were brought together by five common sutures, straps of adhesive plaster were applied, some folded lint placed over with a bandage, and she was removed to her bed in the same state of unconsciousness as when she was brought from it. I saw her four hours after; she was then recovering from the effects of the chloroform, but was suffering from sickness, and pain in the abdomen. Pulse 115, of good strength and fullness. The patient, after continuing in jeopardy for a few days, recovered.

"On the fifteenth day after the operation, it was ascertained that there was no protrusion of the vagina, and it appeared to me on examining the abdomen that the tumour was not of the same size as it was at the time of the operation. The lower part of the wound still remained open, but the quantity of discharge was too small to admit of supposing it came from the tumour. The diminution was supposed to arise from the total abstinence from food for some days, the low diet afterwards, and the constant recumbent position. After this time, it appeared to me that the size of the tumour was gradually diminishing, although she was taking animal food, and by the end of November it was quite evident that the tumour was not more than half its former size. An examination per vaginam was made. The vagina was perfectly natural, and the os uteri was found in the ordinary position. The patient continued to improve, she gained flesh, and her countenance regained the healthy appearance. She was, however, kept to her bed, as the lower portion of the wound was not quite healed; soon after, however, it healed, and she was allowed to get up, from which she found no inconvenience, and she was shortly able to walk about the ward with freedom.

"To account," observes Mr. Norman, "for the very considerable diminution

in the size of the tumour which has taken place since the operation, is a matter of difficulty, and can only be one of conjecture. It may be that a certain degree of inflammation followed the exposure and the handling of the tumour (though there was very little of the latter), and that the vessels of the normal structure of the ovary may have poured out fibrin, and so formed a barrier between the cysts forming the bulk of the tumour and their supply, and this ultimately may have compressed and obliterated them; but be that as it may, the fact of a most important diminution remains, and as the young woman resides in Bath, I shall be enabled to know the more permanent result.

“What has occurred in reference to this tumour may throw some light on cases where such tumours have spontaneously disappeared, of which I believe there are many instances. I had an opportunity of ascertaining one recently. A lady whom I had examined several times nearly twenty years ago had an ovarian tumour full as large as the one we have been considering. I saw her a fortnight ago on another occasion, and had the opportunity of examining the abdomen; I could find no trace of the tumour; her account was that the tumour had remained for some years as when I had examined it, that in the last few years it had gradually diminished, that latterly she could only occasionally find it, and that it was very small. I did not find it, but it may be that, being small, it remains for the most part in the cavity of the pelvis, and she described symptoms which made that probable, but it was not admissible to make an examination per vaginam, to investigate it. Another case has been recently told me by Dr. Robert Ferguson, of Park Street, Grosvenor Square, of a lady who consulted him for an ovarian tumour, of considerable size, and in whom, on her returning to him twelve months after, he could find no trace of it. I know another lady, whose abdomen I had frequently examined, who had a similar tumour full twenty years ago. Sir Astley Cooper also examined it, and gave the same opinion I had given. In this lady, who is now living, it produced nothing more than inconvenience, and if I may judge from the altered appearance of her shape, the tumour must now be very much diminished, but I have had no opportunity of examining it. I have also known an instance where a considerable tumour of the kind formed a communication with the vagina, and after a continued discharge the tumour disappeared, and this person is now living. I know another lady who had for some years a tumour in the abdomen as large as a child's head, which also produced a displacement of the uterus and other distressing and painful symptoms, but which have now entirely ceased, and the tumour became diminished in size. Another instance has been related to me by Dr. Brabant, of a lady who had a large tumour in the abdomen for many years, which always became larger at the time of menstruation, and which gradually diminished after the cessation of that function, and finally disappeared.

“I apprehend the case in which I have operated must be placed as opposed to the propriety of the operation, for if in that case it was not possible to foreknow the existence of insurmountable adhesions, I do not know how anything like certainty can be arrived at; and as this patient's life was certainly in jeopardy for three days, one cannot but think such explorative operations must be attended with considerable danger. Add to this the proportion of deaths after the tumours have been removed, and it will appear probable that the balance will turn on that side. The subject, however, is now fully and perfectly under the consideration of the profession, a great mass of information has been gained, and more will no doubt, for it is to be hoped that every case, whether successful or otherwise, will be recorded, and also those cases of ovarian tumours which have remained harmless, as well as those which have proved fatal, and then we may expect from our profession a dispassionate and correct conclusion.”

42. *Case of Tumour for which the Operation of Ovariectomy was attempted more than twenty-five years ago, with Dissection.*—Dr. TAYLOR read to the Edinburgh Medico-Chirurgical Society, December, 1850, the case of Magdalene Berry, which had been for twelve years under Dr. Myrtle's observation, and had recently terminated fatally. On dissection, a cicatrix was seen extending from the sternum to the pubes. The abdomen did not appear larger than is usual between the fourth and fifth months of pregnancy. A large tumour was felt,

strongly adherent anteriorly to the abdominal parietes, occupying the lower part of the abdomen, and movable. On opening the abdomen, strong adhesions were found between the cicatrix and omentum. The vessels of the omentum were very large, as was reported twenty-five years ago by Mr. Lizars in his account of the operation, which he attempted for the removal of the tumour. There were firm adhesions between the anterior surface of the tumour and the abdominal parietes, and between its superior and posterior surfaces and the large and small intestines. The peritoneal surfaces of the bowels were adherent at various points. The tumour was found to be a fibrous tumour of the uterus connected with its fundus by a narrow fold of peritoneum. Both ovaries were small, and in their proper position. The uterus was atrophied. There was great softening and dilatation of the heart. The patient, while under Dr. Myrtle's care, was affected with general dropsy. She had derived marked benefit from the use of diuretics and purgatives. Death had taken place from apoplexy. In Mr. Lizars' work on "Extraction of Diseased Ovaries," it is recorded that, immediately after the operation, which it was deemed imprudent to complete, violent inflammatory symptoms supervened, which left permanently well-marked results notwithstanding the abstraction of 111 oz. of blood within thirty-six hours or so after the operation, as well as the administration of antiphlogistic remedies. The actual cautery was afterwards had recourse to, as also a seton drawn through the anterior portion of the tumour and superincumbent soft parts. Dr. Myrtle's communication concluded with some observations on the difficulty of arriving at a correct diagnosis in cases similar to the above.

The president made some observations on the case as an additional illustration of the unjustifiable nature of the operation of ovariectomy. The recovery of the patient, after the multiplied dangers to which she was exposed by the incision, the resulting inflammation and the seton, was very remarkable.

Professor Simpson could not agree with the president in condemning the operation of ovariectomy as in all cases unjustifiable. It had been performed in many cases in which he believed its adoption was unjustifiable; but where the patient was evidently soon to die, in consequence of repeated tapplings, or otherwise—and where the question was one of certain and speedy death from the disease, or possible recovery and continuation of life from the chances of the operation—and where, in addition, there was no counter-indication to the operation from adhesions, &c., he believed it might be the duty of the surgeon to afford the patient the chances of escape by ovariectomy; and the actual number of recoveries after the operation seemed sufficient to justify its adoption under such circumstances.—*Monthly Journal of Medical Sciences*, Feb. 1851.

43. *Femoral Aneurism cured by Compression*.—Mr. SMYLY communicated to the Surgical Society of Ireland, November 23, 1850, the following case of femoral aneurism, successfully treated by compression:—

"Patrick O'Gorman, aged 48, a schoolmaster, came under my care in April, 1847, three years and a half ago. He stated that, in August, 1846, eight months before I saw him, when walking at his ordinary gait, he suddenly lost, in a great measure, the use of his right leg, and with great difficulty got on half a mile further. Next day he could not put his foot under him, or leave his bed. He suffered intense pain in the middle of the thigh, in the knee, and down the outside of his leg. It was so severe as to prevent him leaving his bed for a week. It then abated, but has returned occasionally, with more or less severity ever since. He is a married man, sober, and well conducted. He was admitted into the Meath Hospital on the 14th of April, 1847. A pulsating tumour, the size of an egg, having all the characteristics of aneurism, existed in the lower part of the middle third of the right thigh. His general health was good. There was excitement of the circulation, and a slight bruit de soufflet at the heart. In consultation with my colleagues, it was determined to treat this case by compression, so applied as not to interrupt completely the flow of blood in the femoral artery. The patient being bled, and confinement to the recumbent position being strictly enjoined, pressure was made at two different points alternately, by means of two clamps—one applied to the exter-

nal iliac artery, the other to the femoral. This treatment was persevered in with more or less assiduity for nearly three months, with no other advantage than a diminution in the size of the tumour. Weary of the restraint, he desired to leave the hospital; and as he fully understood the use of the instruments, and the plan to be pursued, he was permitted to go out. He was then appointed schoolmaster to the National School at Blackrock, and continued to fulfil his arduous duties for about three months, when, having walked a distance of two miles, he suddenly felt a severe pain in the tumour, extending down the leg. The pain continued unabated for two days, and then gradually subsided. Seven days after the occurrence of the severe pain, he called upon me. On examining the tumour, all pulsation had ceased. This he found to have taken place two days ago, the contents of the tumour to have become consolidated, and all pain to have disappeared. Three months after the cessation of pulsation, I had an opportunity of examining the patient: the tumour, though diminished in size, was still to be felt about as large as a walnut, and very hard.

"November 15, 1850, I called upon him, and found him in the enjoyment of good health, equal to perform the duties attendant upon the management of a large school. A very small hard tumour is still traceable at the seat of the aneurism, and pain is sometimes felt down the outside of the leg. On examining the heart and large arteries, no morbid sound is audible; they are apparently free from disease."

Reflections.—1st. When we consider the protracted period required to accomplish a cure in this case, we learn not to abandon hopes of a cure when our efforts are baffled, and prove unavailing, even for six months.

2d. We find the excitement of the circulation and the bruit de soufflet to subside and disappear on the cure of the aneurism just as similar sympathetic affections are relieved when the cure is effected by ligature. This case, then, meets the objection urged against the treatment by compression—viz., that disease of the heart is more likely to attend it than when a ligature is applied; for we see the same beneficial result follow the cure of the aneurism in this as in those cases cured by ligature.—*Dublin Medical Press*, December 11, 1850.

44. *New Instruments for the Cure of Stricture.*—MR. THOMAS H. WAKLEY exhibited to the Medical Society of London (Jan. 25th, 1851) a set of new instruments for the cure of stricture of the urethra. He remarks, in submitting the instruments to the consideration of the Society, that the subject of the treatment of stricture of the urethra had been much discussed within the last year or two, and had given rise to a great deal of controversy. It certainly was not a settled question what should be done in cases of severe permanent stricture. Mr. Syme, the distinguished surgeon of Edinburgh, had, as was known, recommended, where the ordinary means of treatment had failed, the division of such strictures by perineal section. Probably the instruments which he then had the honour of bringing before the notice of the Society would, in some cases at least, render such an operation unnecessary. He had used them in several cases already with very satisfactory results. The instruments he at first used were by no means of a refined or perfect manufacture, yet the advantages obtained were of a decided character. The instruments he now produced had been manufactured by Messrs. Weiss & Co., and, as might be expected, they were very perfectly executed. They consist of—

1. A catheter, thirteen inches in length, of a very small size, slightly curved at the extremity; the stem quite straight, and having at the end a worm for the reception of the screw of the directing-rod.

2. A small thumb-slide (removable at pleasure), screwing closely upon, and acting as a handle to, the catheter.

3. A steel rod, which passes into the catheter as far as the screw, at which part both are united by two or three turns of the rod. The rod makes an addition of five inches to the length of the catheter. The rod and catheter combined form the index-rod, or director, for the metallic and elastic tubes.

4. Of the silver straight tubes, there are nine of graduated sizes; the first is only one size larger than the index-rod, and the others regularly increase in

circumference; the last, or No. 10, corresponding with that number of the ordinary bougie. These tubes are all of a conical shape at their distal extremities, and are so constructed as to fit the mouth of each tube with extreme exactness at the surface of the index-rod. They thus slide with the most perfect ease along that guide, and being directed by it, if the rod be in its proper situation, the tubes cannot take a wrong course or make a false passage, but must pass through the stricture.

5. There are also three *elastic tubes*, composed of a flexible metal, covered with elastic-gum fabrics. This combination gives to the instrument very considerable strength, without rendering it clumsy or bulky. The extremity of each of these flexible tubes has the same form as that of the silver tubes, and fits with perfect accuracy the surface of the index-box.

Supposing, then, that a patient having stricture of the urethra is before the surgeon for operation, the mode of proceeding is as follows:—

First, introduce the catheter, as gently and with as much care as possible, completely through the contracted part of the urethra into the bladder. Having done this, withdraw the stylet, and the surgeon having satisfied himself, by the escape of urine, that the instrument is in the bladder, insert the smaller extremity of the steel rod into the catheter, and having secured it, by making two or three turns of the rod, remove the thumb-slide and then pass No. 3 silver tube upon the index-rod right through the stricture or strictures. In performing this operation, the passage of the instrument will be much facilitated by giving to the flanges a rotatory motion as they are held between the fingers and thumb. This tube being withdrawn, the others may all be passed in a similar manner, and in regular succession. The number to be introduced must of course be determined by the operator. After the last metallic tube is withdrawn, an important object is still to be secured—that of *keeping the command of a free urethra*. How is that to be done? This certainly is a point of considerable importance. Mr. Wakley stated that he was happy to say that it might be accomplished with the greatest ease by passing one of the *elastic tubes* over the index-rod, as was done in the case of the silver tubes. One of the flexible tubes being now in the bladder, *the index-rod is to be withdrawn through it*; this may be done with the most perfect ease and facility. The *flexible tube* may be left in the bladder to serve the purpose of a catheter, and also to afford a safe channel or guide for the re-introduction of the silver catheter or index-rod.

The Society would not fail to perceive that the action of these instruments was safe and simple, and he had the pleasure of stating that the use of them had given him very great satisfaction. The application of the knife for the relief of stricture had been much condemned, although it had been strongly advocated by Mr. Syme, who was undoubtedly a high authority. Still he (Mr. Wakley) could not refrain from expressing a belief that there were strictures which might be removed by the instruments now before him, although Mr. Syme might consider that in such cases the perineal section would be absolutely necessary to effect a cure. Time and experience in the trial of both plans would be required to enable a decision to be formed as to their merits. Mr. Syme had remarked, in a letter published that day, that he had endeavoured to establish two positions: “First. That the division of a stricture by external incision, upon a grooved director, passed fairly through the contracted part, is an operation free from all ordinary sources of danger. Secondly. That, by this procedure, strictures which resist every other mode of treatment are apt to resent seriously even the gentlest use of simple bougies, may be speedily removed so as to allow instruments of the largest size to be introduced without difficulty or inconvenience.” The first proposition demanded particular attention, because he thought the plan of treatment now proposed, by tubular expansion, would, in many cases of stricture contemplated by Mr. Syme, render the perineal section unnecessary. If the grooved director mentioned by Mr. Syme could be “passed fairly through the contracted part,” of course the small-sized catheter or index-rod now shown could also be guided through the stricture into the bladder. Necessarily, if the one instrument could be passed, so could the other; and the passage being thus secured, the tubes, both metal-

lie and flexible, might be made to take the same course without the slightest danger of making a false passage. In some very obstinate and inveterate strictures, he had succeeded in affording relief, almost without difficulty. Some of the strictures appeared to be of the worst possible form. He was glad to perceive some gentlemen in the room who had been present when the instruments were used at the hospital. Amongst them he observed his colleague, Mr. Gay, who could acquaint the Society with the result of the treatment as pursued in the case of one of his patients. In that instance the man had been treated in the ordinary way, but without success. It was suggested that it was a case which would effectually test the efficiency of the new treatment. The rod and tubes were introduced in the presence of Mr. Guthrie and several other gentlemen. After Mr. Gay had very cleverly, but not without some difficulty, introduced a No. 2 catheter, the metallic tubes from No. 3 to No. 9 were passed without a check. No. 8 elastic tube was then passed on the directing catheter, and the latter instrument withdrawn, leaving the elastic tube in the bladder. He might appeal to Mr. Gay as to the accuracy of the statement. Mr. Wakley believed that in the hands of others the effects produced by the instruments would prove as satisfactory as they had been to himself. At the hospital with which he was connected the opportunities for proving their utility were very frequent, and it would afford him pleasure to show any practitioner who might honour that institution with a visit, the manner in which they were employed. The instruments had been seen by Sir B. Brodie, Mr. Guthrie, Mr. Stanley, Mr. Fergusson, and other distinguished surgeons, who all approved of the principles of treatment which their use involved. In placing the instruments before the Society and the profession, he felt confident that they would receive a fair and candid trial. On a future occasion, he should take an opportunity of offering to the notice of the Society the further results of the treatment.—*Lancet*, Feb. 1, 1851.

45. *Rupture of the Crucial Ligament of the Knee-joint*.—Dr. STARK relates, in the *Edinburgh Medical and Surgical Journal* for October, 1850, two instances of an injury, which he believes to have been rupture of the crucial ligament of the knee-joint. The symptoms, nearly identical in both cases, were the following: There was no dislocation either of the ankle or of the knee-joint; no displacement of the knee-pan; no rupture of the tendo-Achillis, or of any of the tendons round the knee-joint. The motions of the ankle, and, when the patient was sitting, of the knee-joint, in so far as its ordinary motions were concerned, appeared perfect. In one case, when the patient assumed the erect posture, the knee-joint was found to be preternaturally movable; and, whenever any weight was endeavoured to be thrown on the right leg, the knee fell against the left leg, *and bent with equal facility forwards or backwards*. When the legs were extended, the slightest pressure on the patella caused the foot to be thrown upwards, *and the leg could be bent forwards on the thigh to a certain extent*. No pain was complained of in the knee-joint, but only a sensation of weariness; and there was no redness, nor swelling, nor effusion of blood.

Dr. Stark made several trials on the first patient, to ascertain the accuracy of the diagnosis. When the knee was bound tightly with a handkerchief, and kept slightly bent, the patient could almost bear the weight of the body on it; but the moment he endeavoured to straighten the limb *the knee bent backwards under him*, and he fell to the ground unless supported. The lateral motion of the tibia on the thigh-bone, though freer than usual, was yet so very limited that there was no reason to conclude that the lateral ligaments were injured.

The treatment consisted in fixing the limb in a nearly straight position, just so slightly bent as to allow the flexors of the leg to have a slight advantage over the strong extensors attached to the patella. A strong flat steel spring, fourteen inches long, with a slight curvature, was softly padded and bound to the back of the knee-joint, half of its length projecting down the back of the leg, half extending along the back of the thigh. The foot and leg to above the knee were then bandaged moderately tight. The injury was ultimately recovered from in both cases; but the knees remained weak, and the patients had to use support for a considerable period. In one case it was five months, in

the other three months and a week before the use of crutches could be dispensed with.

Dr. Stark thinks these cases interesting from their rarity, and from their proving that the injury in question may be perfectly recovered from. He infers that cure must have been finally effected by a reunion taking place between the ends of the ruptured crucial ligaments.—*Lond. Jour. Med.*, Dec. 1850.

46. *Cotton Wadding as an Application to Bed-Sores and Varicose Ulcers.*—In the treatment of wounds and ulcers, one great indication is to protect the parts from exposure to the air. Adhesive plasters, and especially collodion, often serve this purpose, but are inapplicable where a large extent of surface is exposed. In these cases we believe the application of cotton-wadding to be an effectual means of fulfilling the indication. Mr. ROBERT JONES, of Conway (*Lancet*, Sept. 27, 1850), relates the case of a girl, aged 16, who had been suffering from typhus fever, and who had an extensive sloughing sore of the nates, with profuse and offensive discharge. Wine and bark were prescribed, and broth and beef-tea given. Mr. Jones applied some cotton-wadding to the part, with a view of giving her a soft cushion to lie upon, as well as to absorb the abundant discharge. After the application she appeared much relieved. On examination, three days after, the parts covering the spine and the crest of the ilium were granulating, the slough covering them had partially separated, and the parts beneath were looking very well. Mr. Jones has also treated successfully a few cases of varicose ulcers of the lower extremities, by the application of cotton-wadding. The manner of applying it is simply to cover the ulcer, and to dress the patient every second or third day, a roller being applied over the cotton. Perfect quietness, and keeping the limb in the horizontal position, are enjoined; and three weeks or a month are generally sufficient for a cure.—*Lond. Med. Jour.*, Dec. 1850.

OPHTHALMOLOGY.

47. *Preparatory and After-treatment in Cataract Operations.* By ARTHUR JACOB, M. D.—The value of preparatory and after-treatment as part of the surgeon's care in cataract operations has been fully appreciated, and, in practice, amply made available; but the value of a respectful consideration of all the functions of the animal economy upon which health depends has not been so well understood. It is assumed that a patient should be prepared for an operation by taking physic and abstaining from food, yet a rational man, acquainted with the consecutive operation of each apparatus provided for the growth, repair, and preservation of the living being, may well doubt the correctness of such a view. The universal faith reposed in the practice of giving and taking physic has led practitioners not only to place too much reliance on that resource, but to resort to it sometimes to the injury of the patient, as I find in the case under consideration. In preparing a patient for operation, I do not act on the belief that empty bowels are essential to health, or that what are called *feces* should not be found in the intestinal canal; on the contrary, I proceed on a conviction totally different. If a patient be in good health, notwithstanding an habitual retention of the contents of the bowels beyond the prescribed periods, I do not wish to risk an interruption of health by disturbing the natural functions of the stomach and bowels, and I therefore refrain from giving physic. But if the patient be not in good health, I of course endeavour to bring him into that condition by every means in my power, and resolutely resist every attempt to induce me to operate until I have accomplished that object. Above all things, the state of the digestive organs should be carefully studied, and if found defective, if possible, repaired. Nothing seems to require more attention than the state of the tongue as indicative of the state of the stomach and bowels. If it be white, or coated with discoloured adhesive mucus, the functions of assimilation and nutrition are probably imperfectly performed, and a resulting tendency to destructive inflammation from local injury is engendered.

This I see every day exemplified in accidental injuries of the cornea in stone-cutting, and in chipping and turning metals. If the patient has a clean tongue, and is otherwise free from disease, little inflammation, and still less of destructive inflammation, follow the injury: but if the tongue be coated with a thick yellow adhesive layer, ulceration and formation of purulent matter often ensue. In preparing a patient for operation for cataract, this will therefore demand the first care of the surgeon; especially if he finds, as he often does, a deposition of lithates or other salts in the urine. He will also make inquiry as to the state of the discharges from the bowels, as to their colour, consistence, and proportion of undigested materials, and also as to the frequency of discharge; not looking upon what is called costiveness as evidence of deranged digestion, but rather the reverse: undigested food seldom remaining so long quiet in the alimentary canal as the insoluble remains of thoroughly digested aliment mixed with the excrementitious part of the bile. This inquiry is not, however, so easily made as those who are satisfied with loose statements suppose, and many may think it unnecessary; but convinced as I am that attention to this matter is necessary for the success of the operation, I dwell upon it. Every practitioner has his own way of correcting this derangement of the digestive organs; it would therefore be superfluous to enter here into details on the subject. I myself generally rely on a moderate purgative pill with blue pill or calomel at night, followed by some aromatic bitter infusion, containing a little alkaline salt, in the morning and middle of the day; at the same time regulating the diet by restricting the quantity and quality of the food, as well as the periods at which it should be taken. It is usual, in preparing for this and other operations, to make great alterations in diet, substituting liquid for solid, and vegetable for animal aliments. This, however, must be done with caution, leading as it inevitably does to disturbance of the digestive function and interruption of the assimilating and nutritious processes, if suddenly or exclusively adopted. Without digestible nutritious food, good chyle and blood cannot be produced, and without good blood local injuries are liable to suffer from destructive inflammation. Even in the case of old persons habitually indulging in a glass of wine or other alcoholic stimulant, the suspension of that supply of temporary aid to the nervous system should not be suddenly adopted: in fact, the substitution of "low living," and what are called "slops," for generous diet, should be gradually and sparingly practiced, if practiced at all. In my own practice, I resort to it as little as possible, and from experience feel inclined to resort to it less and less.

In particular cases, the surgeon may be called on to prepare his patient for operation by special direction of remedies to specific derangements of health. Persons of languid circulation and feeble frame must be invigorated by generous diet and tonic medicines, while those of plethoric and bloated habit must be reduced to more suitable condition. Scrofulous or rheumatic constitution or diathesis must, if possible, be corrected; and specific disease of any kind, if present, removed. All this, however, is more easily suggested than accomplished. Scrofula or rheumatism is not so easily eradicated, but it is well, with a view as much to general treatment as to prognosis of the result, that this consideration should be kept in view. When called on to operate on a truly scrofulous or rheumatic patient, the surgeon must be careful to warn the parties concerned that the prospects of complete recovery of sight are less favourable than in cases where the health is good. The after-treatment must be conducted on the same principles as those laid down for the preparatory treatment. The tone of the stomach should be preserved, assimilation and nutrition duly maintained, and the general condition of the patient made comfortable. There is no necessity for immuring a patient after this operation in a close and darkened room. The less of bed the better, and the sooner the drawing-room is made the place of convalescence the better also. With elderly ladies, and especially those of weakly nervous system, this cannot perhaps be so soon done; but the sooner it is done the more rapid and certain will be the recovery. Should inflammation arise, it must of course be arrested, if possible, by the usual means, judiciously adjusted to the constitution and condition of the patient. Indiscriminate purging, bleeding, and mercurializing must not be per-

mitted: but if depletion becomes necessary, it must be carried to the requisite extent, without undue severity. The surgeon should not act on the assumption that, if pain and redness be present, destructive inflammation must be in progress: the pain is generally from the pressure of fragments of cataract on the iris, and the redness often from trivial inflammation of the conjunctiva. Whether it be from this conviction respecting the harmless nature of slight inflammation and pain, or from this operation through the cornea being seldom followed by destructive inflammation, I do not find that I am often called on to draw blood either by lancet or leeches. I am now, however, alluding more to the inflammation which may come on immediately after the operation than to that which may come on at a more advanced period, and which is often of more destructive character, on account of its implicating the whole eyeball; assuming a chronic and sometimes an intermitting, and even a neuralgic character. This inflammation must be treated as other inflammations of the eyeball, and as I have laid down in my treatise on that subject. A strange proposal has been made, probably in consequence of the frequency of destructive inflammation after the *posterior* operation. It has been not only suggested, but actually practiced, to administer mercury to a patient previous to operation, so as to have him in a state of salivation, or on the point of salivation, at the time when inflammation is liable to come on. It is not necessary to warn the surgeon against the adoption of any such puerile application of theoretical assumption. Every one knows that the presence of mercury in the system does not prevent the occurrence of inflammation; and the sooner every one knows that mercury is not so certain an antidote against destructive inflammation as people believe, the better. While considering the after-treatment in this operation for cataract, it is necessary to allude to an occurrence which often takes place, and which causes much distress and alarm both to patients and friends. This is a distressing nausea and vomiting which seizes the patient, generally in the middle of the night of the day of the operation, and continues for many hours, and even more or less during the next day. I attribute it to the pressure of the fragments of the broken-up lens on the iris, and find that it is not followed by destructive consequences; but causing, as it does, so much distress and alarm, I generally order an opiate to be taken when it commences, or direct the attendants to be prepared with some effervescing draughts, and to assure the patient that there is nothing unusual or dangerous in the occurrence. I know not whether this remarkable effect has been observed by others or not, or whether it has been recorded in books, and I have not at this moment time to inquire; but I am sure that I have always noticed it in my lectures. As to local applications, the great object of their use should be to dilate, and keep dilated, the pupil, so as to place the iris more out of the reach of the pressure of the fragments of cataract. This is, of course, to be effected by the application of extract of belladonna; but as there seem to be some mistaken notions prevalent respecting this most valuable and remarkable agent, it may be desirable to correct them. The pupil is, of course, to be dilated previous to the operation, to expose the lens fully and to place the iris out of reach of the needle. Some think it necessary to daub the whole eyebrow, lids, and half the cheek with the black extract, and to leave it adhering to the skin for several hours; some even lay it on the night before. This is a great waste of the medicine, and soils the skin and linen. It is astonishing what a small quantity of this most wonderful agent will dilate the pupil, especially in the eye of a young person. One grain of nitrate of atropia, dissolved in an ounce of distilled water, will form a solution, of which one drop from a camel's-hair pencil will dilate the pupil fully in fifteen, twenty, or thirty minutes: a drachm of good extract of belladonna will do the same. I, therefore, always use these solutions in this way, putting in the drop at any time most convenient in the course of the day on which I operate. The application is neither very painful nor irritating, perhaps about as much as a weak solution of common salt, and leaves no redness after half an hour. I should observe that in aged persons this application of the narcotic to the conjunctiva is sometimes absolutely necessary to secure full dilatation of the pupil. The smearing of the extract on the harsh skin in such subjects will not always effect the object. After the operation,

however, the lids and brow should be painted with the extract to dilate the pupil and keep it dilated; because it may not be desirable to cause any additional irritation by dropping the solution on the conjunctiva. This is a very necessary precaution, for the surgeon should know that, however perfectly the pupil may be dilated before the operation, it generally becomes contracted again during the revolutions of the needle; in fact, mechanical irritation, such as the pressure of the needle or the broken fragments on the iris, causes that organ to act and the pupil to return to its original dimensions. This is a remarkable physiological fact, which I have not seen recorded, but which I have for many years demonstrated in the operation theatre. By way of dressing, I leave a lotion containing a couple of drachms of good extract of belladonna in eight ounces of water, to be constantly applied as a water-dressing with a small scrap of old linen as light as a feather, but I strictly interdict all tying or bandaging, and direct the attendant to allow the rag to fall off when the patient turns to sleep.—*Dublin Med. Press*, Aug. 28, 1850.

MIDWIFERY.

48. *Case of Protrusion of the Hand of the Child through the Walls of the Vagina and Rectum in a case of Head Presentation.*—[Dr. JAMES GRAY read before the Edinburgh Obstetrical Society (Dec. 11, 1850) the following instance of the protrusion of the hand of the child through the walls of the vagina and rectum (without injury to the perineum), in a case of common head presentation, which is so rare, if not unique, in its occurrence, as to deserve being placed upon record:—]

On the evening of the 26th February 1850, I was summoned to attend Mrs. Y. in her first confinement. She resided at a distance of twelve miles from my residence in Perth. I found her in bed suffering from a severe expulsive pain. The cry which escaped her led me at once to make an examination. In doing so, I discovered, as I thought, the head of the child partly born, and covered, as is not unfrequently the case, by the membranes. After the pain subsided, I had time to make a more careful examination. The os externum was found to be thrust forwards and upwards to the front of the pelvis; the perineum greatly distended; the orifice of the rectum dilated considerably—exposing its mucous surfaces to the extent of an inch. The head presented in the second position; the membranes were entire. On introducing the index finger of the right hand into the rectum, I found that one of the child's hands lay upon the right cheek. Another pain soon followed, more fully stretching the perineum and opening the anus; without, at the same time, affecting the outlet of the vagina. To prevent the perineum from being injured, I placed the palm of my right hand over the anus and perineum, carrying my fingers into the vagina so as to prevent the too sudden expulsion of the child. While thus engaged, I felt that something had given way; a gush of fluid followed, and a pressure of something solid against the palm of my hand. This I found to be one of the hands of the child, which had protruded itself through the walls of the vagina and rectum a little above the verge of the anus. The pain returning, I expected every moment, from the state of the parts, and from the powerful efforts made, that the perineum would give way. This was prevented by still carefully supporting the parts, retarding by counter-pressure the progress of the child—and thus giving time for the external parts to relax, which in the course of half an hour took place. The head, consequently, was gradually expelled, and as it emerged under the arch of the pelvis, the hand also descended through the opening in the walls of the vagina and rectum, as described above, until it hung over the left nates of the mother. With the shoulders another difficulty now presented itself: this I managed by pulling the arm in the direction of the spine of the mother, and guiding it through the aperture with my left hand; while, at the same time, with my right I supported the head, and carried it forwards and upwards during the continuance of a pain. The shoulders were soon expelled, and the child was safely delivered. The

cord was tied, and in ten minutes the placenta came away. A bandage, with a pad attached to it, was applied round the abdomen. On the injured part being examined, the rent appeared to commence a little above the verge of the anus, and to extend upwards for about half an inch; but the muscular fibres of the rectum had contracted, and reduced it to a mere fissure. It was carefully cleaned, and a piece of lint introduced into the vagina, to absorb the discharge and prevent it from passing between the lips of the wound. At the end of an hour I left her, with strict injunctions to keep herself quiet, and not to move about in the bed. Next day I learned that she had passed a comfortable night, and was as well as could be expected. She went on gradually improving; the feces were expelled *via naturalis*, not in the least tinged with blood. In the course of three weeks she was able to be up a little. Since then I have seen her frequently, and she expresses herself as being quite well.

The circumstances most worthy of remark in this case are—1st. The unfavourable position of the hand of the child. This, in a female who has had several children, would not have been attended with anything peculiarly dangerous; but with a woman who is in her first confinement, the case is otherwise. There is then a great retardation of labour, and the danger of rupture to the perineum. 2d. The unusual position of the posterior commissure of the os externum. This commissure was thrust forwards by the head of the child to the inferior extremity of the symphysis of the pubis, so that the vulva was thereby very much diminished. I have observed that, in many first cases, the external parts are carried forwards; but in no other case that has come under my notice have I observed so great an alteration from the natural position. The state of the anus is also deserving of notice. It was dilated to a size considerably above that of a crown piece—the mucous surface of the rectum being exposed and carried downwards, so as to be in a line with the perineum.

Lastly, there is the protrusion of the hand through the walls of the vagina and rectum; the subsequent closing of the lips of the wound; and the healing process advancing without leaving any fistulous opening between the two canals. This last particular is rarely the result without the aid of a surgical operation.

The treatment adopted consisted in the application of a lotion of the sulphate of zinc, attention to the bowels, and strict rest in the horizontal position.—*Monthly Journal of Medical Sciences*, Jan. 1851.

49. *Central Laceration of the Perineum*.—Dr. THATCHER read to the Edinburgh Obstetrical Society (Dec. 11, 1850) the following case of this character. Mrs. C., in her first pregnancy, had been in labour for some hours previous to her sending for me. The first stage was over, and the head advancing correctly in the pelvis, and nearly on its outlet. The parts were well relaxed; the pains moderate; but the patient, unhappily, most restless and impatient—in fact scarcely controllable. The sacral part of the vagina appeared much deeper than natural, and the head was constantly pressing backwards forcibly, as if wishing to be extruded through the posterior part of the perineum and anus, instead of the superior and natural direction. As the perineum distended, it was quite evident that it was unusually elongated; the *set* of the pelvis reminded me much of that of the Hottentot Venus, pressing pubis and sacrum out of the ordinary line. Every exertion was made to guide the head superiorly to its proper position by the fingers, but this was of little use; and before the forceps could be employed, a sudden terrific pain, aided by the *over-exertion* of the patient—to my surprise and great distress, and despite of every retarding exertion—forced the head through the perineal space, between the lower commissure of the labia and the anus, keeping the lower frænum of the labia entire, as also, fortunately, the sphincter ani. The body was extracted in the same manner, as also the placenta. The patient was told that she had hurt herself by this unhappy exertion.

In the afternoon the parts were examined, and the above statement confirmed. The divided perineum was uniting at its edges, and appeared like two portions of a saw closing. They were kept united by ligature, and healed most favourably. The vagina also was kept clean, and after a fortnight all the parts

were in their normal state. I have heard of two other similar cases, but this rare case is one evincing what may occur in any deviation from natural conformation, in defiance of the best care and aid.—*Ibid.*

50. *Case in which the Cæsarian Section was performed, with remarks on the peculiar sources of danger attendant on the Operation.* By CHARLES WEST, M. D. (Communicated to Royal Med. and Chirurg. Society, Jan. 28, 1851.) The subject of this history was a young woman, aged 27, a patient of Mr. Wren, of Bronlow street, whose health had always been indifferent, but whose person was not apparently deformed, and who reached the end of her first pregnancy without manifesting any symptoms especially calling attention to the state of her osseous system, with the exception of pains of a rheumatic character, and difficulty in walking, which last became very great during the last two months of her pregnancy. When labour came on, which it did at the end of the full period of utero-gestation, the existence of extreme pelvic deformity was at once ascertained by Mr. Wren, in whose opinion, as well as in that of Dr. West, Dr. Murphy, and Dr. Ramsbotham, the performance of the Cæsarian operation was indicated. It was accordingly performed by Mr. Skey fourteen hours after the commencement of labour, and eight hours after the rupture of the membranes, uterine action having, however, been feeble from the first, and having almost ceased since the escape of the liquor amnii. The patient was by her own desire subjected to the influence of chloroform, before the operation was begun; no difficulty was experienced in its performance; and a living female child was extracted. Very formidable hemorrhage succeeded the removal of the placenta, and the subsequent contractions of the uterus were very tardy in their occurrence. The patient was left in a state of great exhaustion, from which she never completely rallied, and died in 108½ hours after the operation, apparently from the conjoint effects of the hemorrhage during the operation, and of the shock to the nervous system. The treatment consisted in the administration of stimulants and nourishment, both by the mouth and in enemata, and the patient was kept in the same manner almost throughout under the influence of opium. The body, on examination after death, presented no evidences of serous inflammation, but the uterine wound was gaping widely, and even that of the abdominal walls was but partially closed. The pelvis presented, in a most marked degree, all the characteristics of that deformity which is produced by mollities ossium; the pubic bones being projected into a beak 1.2 inches in length, the width of the pubic arch being reduced to .6 of an inch, and the distance between the tuberosities of the ischia to 1.2 inch. The writer, having noticed the high maternal mortality resulting from the Cæsarian section, and which he estimates at much more than the number of 63 per cent., at which the statistics of all cases recorded since 1750 place it, since the results of cases occurring in hospitals abroad yield a maternal mortality of 79 per cent., and of cases in this country of 85.4 or 87.5 per cent., according to two different estimates, proceeded next to point out the apparently inevitable causes of this high mortality. These causes he referred to four heads, and illustrated their respective influence by reference to a table of 134 fatal cases in which the body was examined after death. The four heads are as follows: 1st. The danger arising from hemorrhage, which proceeds from a source different from that whence bleeding takes place in any other operation, and which is not capable of being arrested by the same means as suppress it under ordinary circumstances. 2d. That dependent on the shock inflicted on the nervous system, as well by the violent interference with the most important process that ever goes on in the organism within the same limited time, as by the injury to a part so important and so richly supplied with nerves as the uterus of a parturient woman. 3d. The hazard inseparable from extensive injury to the peritoneum, when unblunted in its sympathies and unaltered in its texture, as in cases of ovarian or other tumours, for the removal of which a similar exposure of the abdominal cavity is sometimes practiced. 4th. That which results from the infliction of a wound on the uterus at a time when, in the ordinary course of things, the processes which nature is prepared to carry on in it consist in the disintegration and removal of its tissue—processes the very opposite to those essential to

the repair of injury. From a consideration of all of these sources of danger, to the last of which attention has hitherto scarcely been directed, the author arrived at the conclusion, that they being so serious, and so beyond the power of art to prevent, the rule which forbids the performance of the Cæsarian section, wherever there is a reasonable probability of accomplishing delivery by the natural passages, is founded on solid grounds, and ought to be adhered to.—*Med. Times*, Feb. 22, 1851.

51. *Case of Cæsarian Section.* By HENRY OLDHAM, M. D. (Communication to Royal Med. and Chirurg. Society.) The subject of this case was a rickety, deformed girl, aged 23, unmarried, pregnant with her first child, and seven months gone in gestation, when first seen by Dr. Oldham. On examination, the pelvis was found to be reduced to two inches in its conjugate diameter, and the uterus was much anteverted.* The membranes were punctured for the induction of premature labour, in a few days after she was seen, September 23d, 1850. On the following morning, the left arm was found in the vagina, but labour did not come on until nine A. M. on the 26th. In twelve hours, the os uteri was dilated, and then some attempts to deliver her were made. The child could not be turned; but, by drawing down the protruding arm, which, from commencing decomposition, soon gave way, and pressing the abdomen from below, the head was brought over the brim, and was at once perforated. For four hours, the crotchet was employed, both inside and outside the head, the bones of which were completely torn up, but without drawing it through the brim. At this time, a new impediment was found to have arisen, from the descent of the right hand and a foot, by the side of the collapsed head, into the pelvic brim; and, on watching the effect of labour pains, all these parts were felt to be squeezed together in the narrow inlet of the pelvis, each preventing the other's descent. It was attempted to bring down either the foot or hand, but only the slippery tips of each could be touched, and they could not be moved. The patient had now been seventeen hours in labour, and it became a question for serious consideration and consultation, whether she would be able to sustain the necessary efforts for her delivery, and whether it would not be for her benefit to perform the Cæsarian section before exhaustion came on, which at length was determined on. The operation was performed by Mr. Poland, without difficulty, and with little hemorrhage, the patient being under the influence of chloroform. The incision, five inches long, was slightly curved, and a full-sized seven months' fetus was removed, and afterwards the placenta and membranes. For two days the patient did well, but then exhaustion came on, and she died. While she lived, she was kept under the influence of opium, and was sustained by simple cold drinks. On *post-mortem* examination, there were some slight traces of peritonitis near the uterus. The external opening was closed, and its edges adherent, but the uterine incision was gaping. The larger omentum was indurated and inflamed, and so drawn across the uterus, above the incision, as to prevent any discharge from the latter organ escaping into the peritoneal cavity. Two practical questions were suggested by this case: 1st. What was the best plan to attempt to follow out in the delivery at first? 2d. Were the complications such as to justify the Cæsarian section? With respect to the first, two plans of treatment might be adopted: 1st. To induce labour, and deliver by craniotomy. 2d. To allow her to go to term, and then perform the Cæsarian section. In determining in favour of the former, the author was guided by the great probability—with a conjugate diameter of two inches—of being able to deliver with the crotchet, and he considered that his inability to do so arose from the complex presentation. With reference to the second, he was induced to have recourse to the Cæsarian section, from a conviction that the patient would probably sink under the prolonged efforts at delivery; and a case was related, which occurred in the Lying-in Charity, at Guy's, under Dr. Ashwell, where a woman with a far less contracted pelvis died undelivered, after the powerful and sustained efforts to relieve her. It was remarked that the girl had but a feeble

* The skeleton pelvis was exhibited.

constitution, which would ill support so hard a trial of its powers, and the condition of the vagina was particularly noticed as retaining the marks of early age, being structurally weak and easily lacerable, and most unfavourable for a long craniotomy operation. Under these circumstances, the Cæsarian section offered a speedy and sure, instead of a prolonged and doubtful delivery. It was not yet forbidden from exhaustion, or any signs of inflammation; on the score of suffering, it contrasted most favourably with the persistence in the use of the crotchet; and, upon the whole, it was judged to offer a better chance of ultimate success. The curve in the incision was suggested to catch the outline of the muscular fibres on the inner surface of the uterus, and so favour the closure of the wound. The scanty hemorrhage during the operation was in a measure accounted for by the uterus being at the seventh instead of the ninth month, by the placenta being attached to the posterior wall, and the uterus being opened low down towards the cervix, where the veins were less developed. Chloroform was said to be a gain in every way, and the after-treatment by opium appeared satisfactory.—*Med. Times*, Feb. 22, 1851.

52. *The Cæsarian Section and Premature Labour*.—The reading of the two cases presented in the preceding articles gave rise to a very stormy, wordy, and rather personal discussion in the Royal Medico-Chirurgical Society, which is reported in full in the number of the *Lancet* for Feb. last. As little that is new seems to have been elicited, we shall merely give a brief abstract of the remarks of Dr. ROBERT LEE as reported in the *Med. Times* for 22d Feb.

“Dr. R. Lee gave a historical notice of the Cæsarian operation, and of the induction of premature labour. He stated that the former operation had been performed four hundred times in Europe, forty-eight of which were done in the British Islands, besides several fatal unrecorded cases. The opinions of Guillemeau, Ambrose Paré, Mauriceau, condemnatory of the operation, were cited. Mauriceau asserted that there were few, if any, cases in which the accoucheur could not extract the child, living or dead, whole or in pieces, without the necessity for the Cæsarian section, and in this opinion Dr. Lee concurred. In England, in 1756, the operation for inducing premature labour was first adopted, and was successfully carried into effect by Dr. Macaulay, but for several years afterwards was rarely practiced, while the Cæsarian section was performed, and generally ended fatally. Dr. Denman wrote strongly in favour of inducing premature labour; he stated that it was a perfectly safe operation for the person on whom it was performed. It has been repeatedly practiced with success during the last fifty years. Dr. Merriman has practiced it thirty times; Dr. H. Davies on fifty occasions, and he himself (Dr. Lee) on as many occasions. In Dr. H. Davies’ cases, twenty-nine children were born alive, and all the mothers recovered. In one case, Dr. Lee stated he had performed it twelve times, the woman being now alive. It is applicable in all cases of distortion; in the slighter cases at the seventh month, in those more severe, about the middle of pregnancy, or at the sixth month. If it were generally adopted, there would be no necessity for the Cæsarian section. He (Dr. Lee) was the first to induce premature labour in first pregnancies, and he had done so in several cases where a high degree of distortion existed. He then read a table of twenty-three cases of Cæsarian operation performed in these kingdoms, in all of which, save two, which he considered as doubtful cases, the mothers died. Dr. Lee then commented on Mr. Wren’s case. He contended that the characteristic symptoms of mollities of the pelvic bones existed early, and that premature labour should have been induced, in which case the unfortunate woman might now have been alive. A case in which the Cæsarian section was performed at St. Bartholomew’s in January, 1847, was next the subject of comment. Here, he said, the existence of great distortion of the pelvis was detected at the sixth month, and yet premature labour was not induced. The patient was admitted into hospital in November, the seventh month of pregnancy, and operated on in the following January, dying thirty-six hours after. He (Dr. Lee) thought the case was most favourable for inducing premature labour, to which, however, no allusion was made in the report of the case published in the medical journals. He concluded by speaking of a

case at Cupar, in Fife, to which Dr. Simpson was summoned to perform the Cæsarian section, but the woman was delivered before his arrival. He denounced the Cæsarian operation in strong and decided language.

53. *Injury of Cranium and Wound of the Brain in a New-born Child—Recovery.*—In July, 1839, Dr. LAGÆ was called to a woman, aged 34, who had been in labour forty-eight hours. Unsuccessful attempts had already been made to extract the child by the forceps, and subsequently by Smellie's perforator and a blunt hook. Dr. Lagæ found it necessary to perform the Cæsarian operation. The infant was very weak, and scarcely uttered a few moans. It had a very extensive wound of the cranium, a little to the right of the sagittal suture, and a few lines in front of the posterior fontanelle. The brain was exposed, and seemed reduced to a state resembling soup mixed with blood: a small quantity of cerebral substance had escaped through the wound, and, for several days, portions continued to be removed by suppuration, in a state of detritus. The treatment consisted in the application of compresses dipped in cold water; and the child recovered. The mother was restored to health in a few weeks.

Nine months after, Dr. Lagæ exhibited the child to the Medical Society at Roulers. The deficiency in the cranium was then of the size of a two-franc piece, or even less. Even remembering the tendency which the cranium possesses in young children to repair losses of its substance, it must be admitted that the loss was much more considerable at the time of birth. It is also worthy of remark that the child appeared to be as intelligent as other children of the same age.—*London Journ. Med.*, Dec. 1850, from *Bull. Gén. de Thérapeutique*, 1849, t. xxxvii.

54. *Quintuple Birth*—*The Deutsche Klinik*, for Nov. 23d, states that, on the night of the 11th of that month, a peasant's wife, at Alt-Rehfeld, was safely delivered of five living children. One lived three hours, another twelve; the other three survived. The mother was doing well.

57. *Polypous Excrescences from Umbilicus in New-born Children.*—To the extensive category of affections of the umbilicus, Dr. FARRÈGE has added another, of comparatively small importance, but worthy of the attention of practitioners, on account of the anxiety which it may cause to the mothers. We refer to small polypous excrescences developed between the furrows of the umbilical fossa. The following case is an example.

In August, 1848, a female child, three weeks old, was brought to Dr. Farrège. The mother had observed a red body at the umbilicus, which she attributed to misarrangement of the cord by the midwife. The latter examined the child, but was unable to discover anything, because the body, hidden among the folds of the fossa, only projected when the child cried. On turning aside the edges of the umbilical fossa, M. Farrège discovered an excrescence of the size of a large pea, red and granulated, and bleeding easily when touched. A ligature was passed round the base, which was pedunculated, and the excrescence fell off on the third day. The wound was touched with nitrate of silver, and the disease did not re-appear. In another similar case, Dr. Farrège excised the pedicle of the tumour by means of scissors curved on the flat surface, and cauterized the wound. To recognize the existence of the disease at the commencement, it is requisite to make a very close examination, taking care to separate the lips of the umbilical fossa, which, in very young children, lie very close to each other. The treatment is very simple, consisting in excision or ligature, followed by cauterization.—*Lond. Journ. Med.*, Dec. 1850, from *Revue Méd.-Chirurg.*

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

56. *Identity.*—The following curious anecdote is related in MERRIMEE'S History of Pedro the Cruel. "One night, a quarrel took place and a man was killed in the streets of Seville. The victor made his escape, unperceived by the

alguazils, who as usual arrived when all was over. One person only, an old woman, had witnessed the fight; but the night was dark, and the gallants being muffled in their cloaks, she had not been able to distinguish their features. She, however, deposed to one circumstance—the knees of the unknown combatant made a slight crackling noise of the joints as he walked. This was quite sufficient to designate unmistakably the king himself, for this slight infirmity of his knees was known all over Seville. What was to be done? The law required that the murderer should be decapitated, and that his head should be exposed on the spot where the crime had been committed. Pedro, after giving the old woman a small sum of money, ordered the royal bust to be carved in stone, and placed in the street where the duel had taken place.”—*Edinburgh Review*, No. 185.

T. R. B.

57. *Abortion*.—In *Mills v. The Commonwealth*, on a writ of error, the Supreme Court of Pennsylvania decided, in the case of an indictment for an attempt to commit abortion, that a count charging the defendant with an attempt to produce the miscarriage and abortion of the mother instead of the child is well laid.

It is not the law in Pennsylvania that a count should have charged that the woman had become quick. The words *pregnant and big* are sufficient to this indictment.—*American Law Journal*, New Series, Vol. II. p. 68.

T. R. B.

58. *Ancient Trial for Impotence*.—There is, in the New York State Library, a curious book entitled “*Processus Divorcii inter Joannem Gyb, in Strather, et Margaretam Hillok, A. D. 1563*,” evidently a modern reprint, if indeed it be not printed from the MS. Its contents purport to be taken from the register of the Kirk session of the parish of St. Andrews, in Scotland. Margaret, his “spouse,” accuses John of impotency, having been his bedded wife for upwards of two years. The superintendent ordered them to “coheir” and keep “company together, &c., for the space of three-quarters of a year.” At the end of that time, John denied his impotency, and confessed that he had camall “dayl” with another woman and also with his wife, “but nocht in lych manner as with the other female.” Another order to cohabit within fifteen days, on pain of calling in the temporal power. Finally a trial was held. Gyb confessed his utter impotency as to his wife, but testified that since the present suit he had repeatedly had intercourse with a servant woman of his mother, and this female testified to the same. She was urged thereto by the mother, to the effect that the “verite mycht be haun of the brut rased agains Jhone be Margret Hillok, his wyff. And that hyr fee and reward suld be any blak kyrtyll.”

On the 25th of June, 1563 (upwards of a year since the commencement of the trial), the superintendent “fyndes na cause of impotencye prouyn.”

Whereupon, Margaret in July applied for a divorce, on the ground of adultery, proven against John, which was granted, and he was transferred to the temporal power for punishment of his crime.

T. R. B.

59. *Absence of Milk after Delivery*.—This is generally considered as a rare occurrence. A case is mentioned by Dr. HUNT (*Buffalo Medical Journal*, vol. vi. p. 121), of a female with her fifth child, in which the secretion was wanting. There was no swelling or pain in the breast. She had never given milk; the children had all been brought up “by hand,” and three of them were now living. The menses were regular.

T. R. B.

60. *Present Law of Virginia concerning the Crime of Abortion*.—From an interesting communication in the *Medical News*, we learn that, until the late revision of the code, the law of Virginia on this subject was the common law, according to which, the procuring of abortion before quickening was not an indictable offence, if done with the mother’s consent. The alteration proposed by the revisers, while it made the destruction of the fetus, under the circumstances just mentioned, criminal, yet recognized in principle the exploded distinction of the common law, by awarding very different grades of punishment to the procurement of abortion before and after quickening. There was another

objectionable part in the proposed enactment, inasmuch as it did not exempt from the penalty of law the inducing of premature labour by the physician, unless done to preserve the life of the *mother*; the claims of the child to the benefit of the operation in certain cases were overlooked.

Under these circumstances, the correspondent who makes the above communication states that he made a statement to the Revisers as to the injustice and unreasonableness of the above enactments. These gentlemen yielded to his application, and reported the following clause, which was agreed to by the legislature, and is now the law of the State:—

“Any free person who shall administer to, or cause to be taken by a woman, any drug or other thing, or use any means, with intent to destroy her unborn child, or to produce abortion or miscarriage, and shall thereby destroy such child, or produce such abortion or miscarriage, shall be confined in the penitentiary not less than one, nor more than five years. No person, by reason of any act mentioned in this section, shall be punishable where such an act is done in good faith with the intention of saving the life of such woman or child.”

The expression “any free person” has reference to the different grades of punishment awarded to free persons and slaves, as set forth in another part of the code.

While this important improvement of the criminal law is a matter of congratulation, it is to be regretted that another improvement, also suggested by the writer, did not meet with equal favour, and which was to substitute a *jury of physicians* for a *jury of matrons* in cases of doubtful pregnancy. Certainly the lawmakers could scarcely be aware of the melancholy blunders that the latter have sometimes committed.

T. R. B.

61. *Legal Definition of what constitutes a Wound.*—The English courts are gradually coming into a correct exposition of the word. In *Rex v. Smith*, which I have quoted in another place, (*Medical Jurisprudence*, last edition, vol. ii. p. 287,) the judge said, “There must be a wound (that is, if the skin be broken), whether there is an effusion of blood or not; it is within the statute, whether the wound is external or *internal*.” In that case, there was a blow with an iron hammer on the face, by which the left jaw was fractured in two places, and the skin inside of the mouth was broken, but not at all externally.

In a later case, *Regina v. Warman*, the death of the deceased was caused by a blow on the head with a piece of wood, (a swingle.) The surgeon deposed that death was caused by extravasation of blood, which pressed on the brain. “There was no external breach of the skin on the head. I found a collection of blood in the back part of the head. On examining and cutting into the scalp, I found a collection of blood between the scalp and the cranium, just above the spot where, within the cranium, I found the pressure on the brain. I call that a *contused wound*, with effusion of blood. This is the same thing as a bruise. The internal part of the skin was broken. Medically, we call the breaking of the skin, whether externally or internally, a wound.”

The verdict was that of guilty, and the fifteen judges held that the conviction was right.—*Carrington and Kirwan's Nisi Prius Reports*, vol. ii. p. 195. T. R. B.

62. *Procuring Abortion, or rather Premature Birth.*—A female, a single woman, went to the house of the prisoner, and having informed her of her pregnancy, underwent an operation, as described by witness, of having a pin thrust up into the womb. This was repeated for several days, and it ended in the delivery of a male child, the female being about six months advanced in pregnancy. The child was born alive, but died about five hours afterwards. A medical witness stated that there were no unusual appearances on the body of the child; that it was a healthy child, but, being born at that period of gestation, it was impossible that it could live any considerable length of time, separated from the womb of the mother. It was incapable of maintaining a separate and independent existence. The witness further said, “Judging from the healthy appearance of the child, I cannot suppose that the premature delivery was spontaneous. The operation described would probably and naturally produce

that premature delivery. It might be produced by a fall or any sudden shock received by the mother, but in this case I have no doubt that it was in fact produced by the acts of the prisoner."

The judge (MAULE), in summing up, said, "The prisoner is charged with murder, and the means stated are that the prisoner caused the premature delivery of the witness, by using some instrument for the purpose of procuring abortion; and that the child so prematurely born was, in consequence of its premature birth, so weak that it died. This, no doubt, is an unusual mode of committing murder, and some doubt has been suggested by the prisoner's counsel whether the prisoner's conduct amounts to that offence; but I am of opinion (and I direct you in point of law) that if a person, intending to procure abortion, does an act which causes a child to be born so much earlier than the natural time, that is, born in a state much less capable of living, and afterwards dies in consequence of its exposure to the external world, the person who by her misconduct so brings the child into the world, and puts it thereby in a situation in which it cannot live, is guilty of murder. The evidence seems to show clearly that the death of the child was occasioned by its premature birth, and if that premature delivery was brought on by the felonious act of the prisoner, then the offence is complete." *The Queen v. West, Carrington and Kirwan's Nisi Prius Reports*, vol. ii. p. 784.

T. R. B.

63. *Poisoning with Cocculus Indicus*.—The prisoner was indicted for administering poison, and it was proved that two cocculus indicus berries had been given to a child nine weeks old. The child, after having swallowed them, threw up one by vomiting, and the other passed through her body, in the course of nature, and was found next day in her clothes.

Two medical witnesses, called on the part of the prosecution, proved that the cocculus indicus berry is classed with narcotic poisons: that the poison consists in the presence of an alkaloid, which is extracted from the kernel; that all the noxious properties are in the kernel; that it has a very hard exterior or pod, to break which much force is required.

One of these witnesses added that the berry, if the pod is broken, is calculated to produce death in an adult human subject, though he did not know how many berries would be required for the purpose; that he thought the poison contained in the kernel of two berries, if the pods were burst, and if retained on the stomach, might produce death in a child nine weeks old, but that the berry could not be digested by the child, and that it would pass through its body, without the pod being burst, and so would be innocuous (as had, in fact happened in the present case).

The counsel for the prisoner objected that the berries were not poison within the meaning of the statute, for that, though the kernel of the berries contained poison, yet the pod rendered the poison innocuous.

The judge (Vaughan Williams) overruled the objection, and left the whole case to the jury. Verdict, guilty.

Judgment of death was recorded, but execution was stayed in order to submit the point raised by the prisoner's counsel to the consideration of the judges.

The discussion before them in the Exchequer chamber is given in detail by the reporter, and is quite interesting.

The counsel for the prisoner observed that the indictment was founded on the statute 1 Victoria, chap. 85, sect. 2, which makes it a capital felony to administer to, or cause to be taken by, any person, "any poison or other destructive thing," with intent to commit murder. The real question is, whether the berries in the state in which they were administered were "poison." The prisoner thought he was giving a destructive thing, but did not do so. It was inquired of the counsel by the judges what he would say if arsenic was given in a globule of glass? again, if arsenic was put in a paper envelope and that wrapped in oiled paper, and administered? He contended that in "such states, it could not be a destructive thing." But it was replied, if a person gives poison in too small a dose, you would say that was not within the statute, as it could not be destructive. If you are right in so saying, persons might give doses of arsenic and speculate

on the size of the dose. Finally, Chief Justice Wilde remarked, "The question here is whether the prisoner administered poison with intent to murder. The kernel of the berry was a poison; but he administered it in a condition in which it was not capable of doing injury. Is that administering poison? If a person administers poison with intent to murder, but accompanies it with something which prevents its acting, we all think that it is the offence provided for by this enactment, and that the correction must be affirmed." Justice Alderson said, "This is very different from the case of a person administering an innocent thing, and thinking it poison; there he does not administer poison at all; here he does." The other judges concurred in affirming the conviction. *Regina v. Cluderoy, Carrington and Kirwan's Nisi Prius Reports*, vol. ii. p. 707.

Without impeaching the leading statement of the medical witnesses, that the peculiar substance here called an alkaloid (*picROTOXINE*) is contained in the kernel alone, and that it is poisonous, it appears to me scarcely yet proved that the shell or pod is innocuous. Pelletier and Courbe have found two alkaloids in it in minute quantities.—See *Christison's Dispensatory*, Philad. edit., p. 397.

T. R. B.

64. *The Diseases to which Manufacturers of the Sulphate of Quinine are liable.* By M. A. CHEVALIER.—The above article has now been largely manufactured in France, during thirty years, and it seems to produce peculiar diseases among some of the workmen. M. Chevalier has ascertained that they are liable to a cutaneous affection, which forces them to intermit their work for several weeks at a time; and, indeed, some have been obliged to quit the business altogether.

M. Zimmer, a manufacturer of sulphate of quinine, at Frankfort, mentions that some of his workmen, engaged in pulverizing cinchona, are attacked with a peculiar fever, and which he calls cinchona fever. It has affected some so severely that they also were forced to give up their occupation. This disease has not been noticed in France.

But the cutaneous affection attacks not only the labourer, and that whether he be temperate or intemperate, but frequently also those who merely come in contact with the emanations from the manufacture. M. Chevalier is not at present able to point out the predisposing causes productive of these diseases.—*Comptes Rendus*, October 7, 1850.

I copy the above, as it seems now to be conceded that sulphate of quinine in large doses may be poisonous. If this be so, the above results are not surprising.

T. R. B.

65. *Curare, Researches on it* by MM. PELOUSE and CL. BERNARD.—Curare is a poison prepared by the savages that inhabit the forests on the borders of the Upper Orinoco, the Rio Negro, and the Amazon. Although it has been known as such for some time, still its precise nature is not understood. The Indians who sell it keep its preparation a profound secret. It is only known to their priests.

According to Humboldt, curare is an aqueous extract obtained from a plant of the family of the Strychnideæ; and according to Boussingault and Roulin, it contains a substance analogous to a vegetable alkaloid, and which they term *curarine*.

The information received from M. Goudet agrees entirely with that given by Humboldt, as to its being an aqueous extract; but he adds that, before the extract becomes perfectly dry, the Indians of Messaya add to it a few drops of poison collected from the most poisonous of their serpents. This fact is quite worthy of attention, as the physiological action of curare greatly resembles that caused by the bites of snakes.

Curare is a solid substance, of a black colour, resinous appearance, and soluble in water.

It resembles the poison of the viper in that it can be swallowed with impunity, but when introduced into a wound under the skin, its absorption is uniformly and rapidly fatal. This was proved by very many experiments.

When injected into the blood-vessels in the form of even a weak aqueous

solution, it proved instantly fatal. No cry or convulsion occurred. The same result happened more slowly, when the solid curare or its solution was introduced under the skin, with some striking peculiarities. If birds were operated on, they flew about for a few seconds, apparently unaffected, but then dropped dead. Dogs and rabbits appeared after a few moments to be tired; they laid down as if asleep and soon expired, without any cry or indication of the presence of pain.

On dissection, every appearance showed the complete destruction of the powers of the nervous system. Mechanical or chemical agents caused no reflex movements. The nerves indeed were as inert as if death had happened many hours previous. The blood is black and coagulates with extreme difficulty. It does not redden by exposure to the air.

To show the innocuous operation of curare on the stomach, they performed this striking experiment. They mixed the poison with the food of the animal, and it appeared to be unaffected. No indication of poisonous effects could be perceived. But when an opening was made into the stomach, and the gastric juice thus tainted was obtained, a small quantity introduced under the skin of an animal caused instant death, with the same result as when the pure poison had been applied.

It is evident, in the opinion of the reporters, that these facts prove a want of absorption of the poison by the gastro-intestinal mucous membrane. Still further, a solution of this poison was injected into the bladder of a dog, and was retained during six or eight hours without injury, and yet the urine then discharged, produced, on insertion into a wound, all the ordinary poisonous effects of the curare.

Messrs. Pelouse and Bernard promise hereafter a chemical examination of this substance.—*Comptes Rendus*, October 14, 1850. T. R. B.

66. *A Case of Abortion brought on by Savin, and followed by Perforation of the Stomach, and Death.* Communicated by JAMES H. SALISBURY, M. D., of Albany, to T. R. Beck, M. D.—A lady by the name of Miss ——— came into Albany at 3 o'clock on Wednesday morning, July 24th, 1850, on the western train of cars, and stopped at the Delavan House. She entered her name on the register —, and took a room on the lower floor. About 9 o'clock A. M. the same day, she requested a room on the second floor, where she would not be so much disturbed by the noise from the street. At the same time she stated that she wished to remain a few days. Her countenance was pale and careworn—like one sick and troubled. Room 44 on the second floor was given her.

On Wednesday afternoon about four o'clock, she requested one of the waiters to go and get some medicine for her in a two ounce phial, labelled chloroform. She told him to get the medicine that was written on the label of the phial. This was obtained for her, as requested, at Dr. Burton's, near the Delavan House. On the following morning, about 5½ A. M., she rang the bell, and requested the waiter to go to a drug store and get some medicine. She gave him the two-ounce phial, labelled *chloroform*, and told him to get it filled with the medicine written on the label, and also to get a drachm phial of morphine. This the waiter did as requested. No more was heard or seen of her until Friday, 2 P. M., July 26.

At 2 P. M., Friday, July 26th, the key to the door was found on the outside in the hall on the floor, and the door bolted on the inside. On looking through the keyhole, a portion of a lady's wardrobe was observed lying on a chair. The door was immediately burst open by Mr. Clark, assisted by Mr. Colburn.

The body of the deceased lay upon the bed in an easy and natural position, apparently dead. The coroner (Mr. Brower) was immediately called to hold an inquest. Dr. Swinburn was summoned to make a post-mortem. He called on me to assist him.

Autops. cadav. about thirty-three hours after she was last seen alive, and probably about twelve or fourteen hours after death. She was not yet cold. She lay on her back in the bed in an easy and natural position, her left hand lying over the region of the stomach and her right hand lying off to the right

of her at an angle of about 45°. Near her right hand lay two phials, the one containing chloroform, the other morphine.

Her appearance, externally, was normal, except some white froth which had issued and was still issuing from her nose. On removing her from the bed, found her underclothes and the sheets considerably stained with blood in the region of the hips. The blood afterwards was found to have proceeded from the uterus. On laying open the abdomen, found the stomach bearing marks of high inflammation. It was softened and perforated, and its contents emptied into the cavity of the abdomen. There was extensive peritonitis. The perforation was about the size of a fifty cent piece, and was situated in the region of the greater curvature, near the cardiac orifice. For several inches around the perforation, the stomach was very much corroded, thinned, and softened, so that it was easily torn. Œsophagus in a state which indicated high inflammation. Small intestines very much inflamed for about four feet from the stomach, the remaining portion comparatively healthy. The colon and rectum blackened and inflamed in the vicinity of scybala, which were found to the amount of about a pint scattered through their whole length. These were carefully removed and preserved, together with the intestines, stomach, and œsophagus, for chemical examination. Uterus was found enlarged. It had the appearance of a recently evacuated gravid uterus of from three to four months gone. Empty, except about two ounces of lochial discharge or secretion. Mouth of uterus relaxed and open, so as to admit easily the finger. Vulva and vagina loose and flabby. Judging from the state of the parts, I should think the foetus had been discharged from two to three days.

She appeared to be about twenty-seven years of age, of a moderately full habit, and possessing naturally a strong constitution.

Chemical Examination.—The stomach, intestines, and their contents, with about one quart of matter vomited up in the chamber, consisting mostly of tea and coffee, and the several bottles containing medicine found in her possession were delivered to me for chemical examination. This examination was immediately commenced. From the corroded appearance and perforation of the stomach, the presence of some corrosive mineral poison was suspected. After subjecting the stomach and intestines, the scybala, the contents of the chamber, and what matter had been emptied from the stomach into the cavity of the abdomen, separately to a rigid chemical examination, for all of those mineral poisons which would be likely to produce such a state of things in the stomach, without finding the slightest evidence of any of them, I commenced the search of each part separately for the several vegetable substances of an irritating nature, used as emmenagogues. The first substance tested for was savin. Slight evidence of its presence was found in the stomach and intestines, still greater evidence of its presence in the matter vomited and that taken from the abdominal cavity, and conclusive evidence of its presence in the scybala, or hardened feces. The examination of the aforesaid parts of the body here ended.

Attention was next directed to the contents of the several phials found in her possession. The only one suspected to contain savin was examined. There was about half a drachm in the phial. It was made up of a mixture of oil of savin and tinct. of lavender. No other body was found in any of the phials which would be at all likely to irritate and perforate the stomach. Here the examination for poisons ended. Of the drachm of morphine which she obtained Thursday morning, only thirty grains were left. Of the two ounces of chloroform, only about one half ounce remained. So that from Thursday morning to the time of her death, which probably occurred Thursday night, she swallowed or otherwise disposed of thirty grains of morphine and one and a half ounces of chloroform.

From papers in her trunk, she appeared to be unmarried. The state she was in showed conclusively that she had been pregnant, and between three and four months gone; from the chemical examination, that savin had been administered; from the circumstances of the case, that it had been given or taken to produce an abortion; from the post mortem, that a violent gastritis had been excited, which resulted in abortion, softening and perforation of the stomach, peritonitis and death.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Wills' Hospital—Service of Dr. ISAAC HAYS—Cases discharged from Oct. 1st, 1850, to Jan. 1st, 1851.

	Cured.	Relieved.	Incurable.
Acute conjunctivitis,	1	0	0
Chronic conjunctivitis,	3	4	0
Granular conjunctivitis,	5	4	0
Corneitis,	2	0	0
Iritis,	1	0	0
Scrofulous ophthalmia,	3	0	0
Phlyctenular ophthalmia,	2	0	0
Ulcer of the cornea,	3	0	0
Wound of the cornea,	2	0	0
Opacity of the cornea,	1	0	0
Vascularity of the cornea,	1	0	0
Cataract,	2	0	0
Amaurosis,	0	1	1
Staphyloma corneæ,	1	0	0
Irritable retina,	0	1	0
Injury of the eye,	1	1	0
Coxalgia,	2	0	0
	30	11	1

Wills' Hospital Dispensary—cases treated:—

Acute conjunctivitis,	9	Purulent conjunctivitis,	5
Chronic conjunctivitis,	12	Scrofulous ophthalmia,	14
Catarrhal conjunctivitis,	4	Pustular ophthalmia,	5
Granular conjunctivitis,	5	Ophthalmia tarsi,	13
Rheumatic ophthalmia,	2	Amaurosis (partial),	4
Iritis,	1	Inflammation of lach. sac,	1
Ulcer of the cornea,	3	Tumour of the lid,	3
Opacity of the cornea,	3	Injury of the eye,	3
Particles of steel in the cornea,	5	Wound of the cornea,	2
Total,			94

Staphyloma Corneæ.—Henry J., æt. seventeen, a native of Va., having good general health, was admitted, October 23d, for the relief of a deformity caused by a staphyloma corneæ. When nine years of age, he received an injury of the left eye with a pair of scissors, the blades of which were thrust through the cornea. Since the accident occurred, he has had no vision in the injured eye. Soon after the time of the injury, the cornea began gradually to become prominent, and the protrusion continued to increase, until ten months previous to the date of his admission; when three knob-like prominences made their appearance near the margin of the cornea, and the whole globe began

to enlarge. When admitted, the cornea was quite opaque and very prominent, and the three knob-like elevations were about the size of large peas. The whole globe was enlarged to such an extent as to prevent the complete closure of the lids without great difficulty. From the time of receiving the injury he has suffered little or no pain in the diseased eye, and the sympathetic irritation of the sound eye had been but slight. Oct. 30th, Dr. Hays, in the presence of his colleagues and Dr. Wm. Ashmead, removed the whole of the cornea, making first an incision of the lower half with a Beer's cornea knife, and completing the entire section with curved scissors. The contents of the globe immediately escaped, and a very profuse hemorrhage followed, which continued for over two hours, and then ceased upon the formation of a large coagulum between the lids and the incised margins of the cornea. This coagulum was suffered to remain until it came away spontaneously, on the sixth day after the operation. On the second and on the fourth days there was a recurrence of considerable hemorrhage—the whole amount of blood lost was about 3xvj. Soon after the operation, the eye became greatly distended and extremely painful. For five days the patient's sufferings were intense, and several times he exhibited some premonitory symptoms of tetanus. When, on the fifth day, suppuration was fully established, the pain became less, and gradually subsided with the subsidence of the distension of the globe. On the tenth day the patient was permitted to sit up, having then but little pain. On the fourteenth, he could close the lids over the eye, and on the twenty-ninth he left the hospital, the globe having been diminished to four-fifths its natural size and entirely free from inflammation. Since leaving the hospital, he has had two slight attacks of irritation in the right eye.

Cod-Liver Oil.—This remedy was employed in the constitutional treatment of all the various forms of scrofulous ophthalmia, and the results were such as fully to sustain the great confidence which Dr. Hays has in its efficacy, a confidence which, he remarked, had been gained from the use of the cod-liver oil in a large number of cases in both public and private practice for the last three years. The oil was also found of especial value in all cases which, under ordinary treatment, have a tendency to frequent relapses; in these cases, its use alone was found sufficient to effect a cure, unaided by local applications. This was most evidently manifested in the case of a sailor, æt. 25, who came into the hospital in March last, and for the last three years has been the subject of a most intractable conjunctivitis. Up to the 1st of November last, the usual modes of treatment were diligently employed without any amendment; indeed, he was much worse in October than he had been at any time since he came into the hospital. From the time of his admission up to the 1st of November, he had several very severe relapses, in the last of which he had an ulceration of the cornea, which perforated and allowed the escape of the aqueous humour. It was while suffering the most in this relapse that he was ordered the cod-liver oil, with an entire discontinuance of all other remedial means. At that time the vascularity of the cornea was such as entirely to obscure vision—lachrymation was profuse, and photophobia intense; his improvement from that time to this (January 24, 1851) has been rapid and permanent. He can now see to read; he can also bear the light of noon-day without lachrymation or inconvenience of any kind, and the great vascularity of the cornea has almost entirely subsided. Many other instances, illustrative of the statements above made, might be cited from the present service of Dr. Hays, did the space designed to be occupied by this report permit.

A. F. MACINTYRE, M. D., *Resident Physician.*

On the Importance of establishing a Lectureship on Dental Surgery in Medical Colleges. By E. B. GARDETTE.

The writer, a practicing dentist of Philadelphia, begs leave respectfully to call the attention of the trustees and medical faculties of the medical schools of the United States to the propriety and advantages of establishing an adjunct professorship to the chair of surgery, in which the specialty of dental surgery may be taught to the medical student seeking knowledge in your institutions.

In making this suggestion, he indulges the confident belief that the existence of such a chair would be no less useful to those who may be compelled to practice some branch of dental surgery, as part of their duties in general surgery, than to the smaller number who may determine to embrace that specialty as their profession.

The writer would offer for your consideration some reflections that seem to render this proposal consistent, not only with the wants of the student of medicine and the public, but with the duty and the interests of the medical schools which may act upon this request in such form as seems most proper to their own judgment.

It will scarcely be assumed by any trustee, and still less by any member of a medical faculty, that the profession of the dentist or its duties, are less important to mankind than any other of the specialties of surgery—whether the oculist, the aurist, or the lithotomist; and therefore it is needless to consider such a question open for debate, or requiring argument in a country, especially, where the services of good dentists have been so widely and universally needed. It being granted, then, that the science itself is of equal importance with the other departments of surgery, it is an undeniable truth that, whilst all other specialties are taught and included in the professorships of medical schools generally, the principles and practice of dental surgery have received no attention, or certainly none that would permit the graduate of medicine to feel that he was qualified for the simplest duty of the dentist.

Such a state of things was perhaps an unavoidable evil when men could not be found who were competent to teach the principles of our science, and when there was need of a comparatively small number of dentists; and hence no such aid was then called for from the medical colleges: but at this time there would seem to be required about twenty-five hundred dentists, more or less, throughout the United States, which is sufficiently proved by the fact that about that number are believed to be engaged in the practice of the profession, after some fashion or other—good, bad, and indifferent; and to supply an increasing demand for well-educated dental surgeons, as well as to raise the standard of that profession, would appear to be a matter of common interest.

Within a few years, two or three colleges of dental surgery have been established in this country under the sanction of charters from the States in which they are located; and without examining into their history or their influence upon the profession of the dentist, it is a source of regret that they must be regarded as the offspring of your neglect, and their very existence a reproach upon medical institutions for their unjust and exclusive course towards the science of dental surgery. It would seem an act of inexplicable unkindness to have thus singled out the profession of dentist from among the specialties of surgery, and forced it into an attitude of independent self-protection; but a gentleman who fulfils the duties of both medical practitioner and dentist with such distinguished abilities as to be an honour to both professions, has traced truthfully the origin of the neglect of which the dentist complains. The undersigned quotes from a valedictory address to the graduating class of Baltimore College of Dental Surgery, March 1850, when speaking of the early periods of the existence of a medical faculty:—

“They condemned, without stint, a calling they knew not how to practice, and a practice they knew not how to improve. Such of the faculty as were learned in their profession were found always competent and fully prepared to be oculists, aurists, or lithotomists, or to devote themselves to any other branch of the profession which their interest, inclination, or talents might determine, *except* that of dental surgery. This branch seemed to require something more than medical knowledge; it required great mechanical skill—an education of

the hand as well as of the head—a kind of education they had not received and knew not where to acquire, and yet affected to despise. The necessities of the community cried aloud to them for help—a help which they could not bestow. This drove many sufferers to seek dental aid out of the medical profession, and to obtain that help which mechanical genius alone could supply. At this the profession seemed mortified and chagrined, and loudly mocked at those who dared to supply their delinquencies, and united as one man in deriding the uneducated dental mechanic. They first created the necessity for an empiric, and then croaked forth their withering contempt on the creature their own ignorance had made.”

Thus has dental surgery been left to struggle through endless impediments and difficulties, instead of being regarded as a link, however humble, in the great chain of medical science, which should with patriarchal strength and harmony foster and embrace every branch of the healing art.

It is now believed that, among the number of medical students who attend each of the schools, there are many who would gladly devote themselves to the specialty of dental surgery, and it is from among these, and at the early age at which they generally devote themselves to medical studies, that good dentists could be formed; they should still be required to earn and receive a diploma with the title of M. D., as a guarantee of fitness to practice and a claim to confidence as dentists. Even among the number that annually graduate, either to practice medicine generally, or limiting their attendance to their own families and dependents at the South, a correct knowledge of the theory and practice of dental surgery, such as might be derived from a course of lectures, would be highly valuable. And it is believed there would not only be a direct increase of good dentists, but a desirable addition to the number of those who should be competent to determine what constitutes a good dentist.

The establishment of separate schools for each specialty in medical science (and why should there not be for the oculist, or the aurist, as well as the dentist?) would appear to be the dismembering of a great family, thereby lessening its influence for good, as well as that power which is justly derived from an *esprit de corps* subsisting in every branch of an elevated and honourable profession.* In this expression of opinion as to the ultimate tendency of dental colleges, the undersigned is actuated by no unkind or invidious feelings, but, on the contrary, he gives them due credit for the efforts they have made and are making to improve the profession; and to the Baltimore College of Dental Surgery he is personally grateful for acts of courtesy and kindness towards himself, and to the memory of his father.

The educated dentists in the various parts of the United States are abundantly numerous, it is believed, to fulfil such duties as might be assigned them in each of our medical colleges. The students who now attend the dental schools would in this event be added to the number of matriculants in the medical classes of the country, and the need of separate institutions would cease.

Frequent occasion for consultations between the physician, the surgeon, and the dentist, has been felt by almost every practitioner of medicine, as a necessary consequence of the connection and sympathy reciprocally existing between the teeth and many serious disturbances of the general health: such sympathies would naturally seem to suggest the mutual dependence between the physician, the surgeon, and the dentist, and should be a good reason for some similarity and sympathy in their modes of education. The benefits from such a state of things as the mind can readily anticipate would not rest here; medical men would sometimes, no doubt, receive important aid from the dentist, in tracing to their true origin many diseases of the head and face that now baffle their skill.

Whatever action your medical faculty or board of trustees may see fit to take in reference to these suggestions, and the object they are designed to promote, the undersigned may at least respectfully urge that they would seem to demand fair and kindly consideration, as involving matters of deep concern to the community, for whose safety and advantage all medical learning is sought, and medical colleges instituted and fostered.

DOMESTIC SUMMARY.

Femoral Aneurism cured by Compression.—Dr. W. H. CHURCH records, in the *New York Journ. of Med.* for March last, a case of aneurism of the right femoral artery successfully treated by Dr. JOHN WATSON by compression.

The patient was a man thirty years of age, who was admitted into the New York Hospital with a pulsatory tumour which he first noticed three years previously, and which has been steadily increasing since. When admitted into the hospital, his condition was as follows:—

“The tumour is tense, but elastic to the touch, in fact presenting all the characteristic signs of femoral aneurism, but unusually well marked. It is situated on the anterior and inner part of the ham, its upper edge being three inches below Poupart’s ligament, probably just below the giving off of the profunda branch of the femoral artery; it is slightly oblong, extending down the course of the artery six inches, that being its greatest length.

“*Jan. 19th.* The leg being bandaged from the toes up to the knee, pressure was commenced at a quarter past one, P. M., with Dr. Hosack’s instrument, by which the counter-pressure is made over the trochanter and the outer condyle of the os femoris. When the instrument was first adjusted, and pressure made over Poupart’s ligament sufficient to stop the pulsation in the tumour, patient most confidently said he could bear it for four weeks. At two P. M., pulsation was felt in the tumour, and he complained of some pain. Another pad was applied two inches below, and the pressure of the other slackened, though retained in the same position. Four o’clock, full pulsation, and patient suffering severe pain; pad changed, and tinct. opii gtt. xl administered. During the afternoon patient suffered very severe pain, the pressure requiring to be changed very frequently. At six P. M., tinct. opii gtt. xxx was ordered. At eight o’clock he complained of excessive pain passing down the thigh to the knee-joint; tincture of aconite was painted over it and about the pads, which he said gave him relief. It was found impossible to control the circulation sufficiently by the lower pad of this instrument, and therefore Signorini’s artery compressor was substituted, one pad being placed upon the plate of the former instrument and the other over the artery. Sol. sulph. morphiae (Magendie’s) gtt. xx.

“At 9 o’clock the pain was so severe that sulphuric ether was administered, which relieved the pain for an hour; and he appeared to be more under the influence of the opiates after the anæsthetic influence had passed away. The senior assistant remained with him during the night, and at one A. M. of the 20th felt pulsation in the tumour for the last time, when he adjusted the pad, so that its pressure was borne very well until 5 A. M.

“*20th, 10 A. M.* Blood could be heard passing through the tumour, but no pulsation heard. Signorini’s compressor was again adjusted, and remained undisturbed until half-past four in the afternoon, when the pressure was slightly moderated.

“*21st.* Compression has been continued during the last night, though less firmly than at first, and entirely at the lower point. At midnight sol. sulph. morph. gtt. xx was again administered, and about three o’clock this morning patient fell asleep, and slept more than an hour. There is no pulsation to be felt either in the tumour or in the posterior tibial artery. The temperature of the limb is a very little lower than of that of the opposite side. Patient feels very much less pain, and pressure is borne for several hours with but little complaint.

“*22d.* Patient slept during the greater portion of the last night, and to-day complains of but little pain. The size of the tumour is somewhat diminished, and feels much softer than yesterday. The limb is not at all swollen, and its temperature is about the same as that of the other side.

“*25th.* Since the last date, very moderate pressure has been continued, change of position of the pad not being required oftener than once in twelve hours, and to-day the compressor is entirely removed. A thick compress of lint is applied over the artery, and firmly secured in its position by a single spica bandage. No pulsation can be detected in any part of the limb, though the

surface is now of a higher temperature than that of the left side. The tumour is gradually diminishing in size.

"28th. All compression is to-day discontinued, the bandage removed from the leg, and the patient allowed to sit up, the limb being elevated, and resting upon a pillow. He speaks of slight numbness about the knee, but has no pain whatever in the limb.

"Feb. 1st. No pulsation can yet be felt in the popliteal or posterior tibial arteries, though the limb is fully as warm as the other. Patient sits in a chair during the whole day, and sleeps perfectly well at night, without the aid of an anodyne. The tumour continues to diminish, and is now not more than half as large as before treatment was commenced. It is also becoming more firm.

"6th. Patient being very anxious to return home, permission to do so is given. Pulsation in the posterior tibial artery has not returned."

Coup de Soleil, or Sun Stroke. By FREDERICK D. LENTE, M.D., Resident Surgeon at the New York Hospital.

In "A Summary of the Transactions of the Coll. of Phys. of Phila.," published in the last number of the *Amer. Journ. of Med. Sciences*, are some remarks by Dr. Pepper, one of the physicians of the Pennsylvania Hospital, on the above disease. "He considered it a remarkable circumstance that this affection has received so little attention from medical writers." "In consulting the standard authorities, we find but little said in reference to it, and that little generally vague and unsatisfactory." This fact is, in our opinion, easily accounted for. The disease seldom occurs except in crowded communities, as in large cities; and in these, only among a particular class, the common labourers, who earn their daily bread by their daily work, and are consequently compelled usually to labour during the intensest heat of the day, when the thermometer, in the shade, ranges from 96° to 100°, and over, with not only the direct rays of the sun playing full upon them, but also the reflected rays from the pavements and buildings. Added to this, as the efficient and exciting cause, we have fatigue, intemperance, and often insufficient or improper food as predisposing agencies; these causes do not usually exist in the country, and in small communities, where, if labour is performed in the heat of the day, and under exposure to the sun, it is with a supply of fresh, wholesome air, with none of the other predisposing causes; the powers of the constitution will, under such circumstances, generally resist its baneful influence. The members of this class, when an accident befalls them, are almost always conveyed immediately to the hospital; and therefore it is rather rare for a private physician to be called to treat a single case of coup de soleil, and of course nothing can be furnished by him on the subject in the way of practical experience. When brought to the hospital, it is generally at an hour when the attending physician is absent, and the case usually lies before his next visit, or is so far recovered as not to call for his particular notice, so that he knows but little personally of the phenomena of the disease. It is thus only seen by the resident physician, who, in the discharge of his multitudinous duties, takes no particular note of the symptoms or history of the case, but sees the patient die in a few hours, perhaps in a few minutes, after his admission, and thinks no more of it.

Private physicians are sometimes called suddenly, in the heat of the summer, to a man who has "fallen down in a fit, while at work," and regarding the case as one of apoplexy, he pulls out his lancet, bleeds him, and sends him to the hospital. This is almost universally the practice. Dr. Pepper says, of twenty hospital patients, *all* had been bled previous to admission. This fact is, of itself, a strong indication that some knowledge of the pathology of the disease is much needed in the medical community; for it is well known to those who have had much experience in this disease, that venesection, if it succeeds, is almost certain death.

In this city the disease is quite common in the months of July and August, commencing sometimes as early as the middle of June, and ending as late as the first week in September. In the summer of 1847, if I remember rightly, there were thirty-seven cases in four days. Most of them died so promptly that there was not time to convey them to the hospital, the coroner being usually

the only physician who saw them. Not only were men affected, but animals, omnibus horses especially, it being quite common to see them fall, and die in the street. During the last five years, according to our records, *forty-two* cases were admitted into the hospital. Of these, *twenty-four* died, and *eighteen* survived. Fourteen occurred in the month of August, twelve in July, twelve in June, and four in September.

The prognosis in this disease, as in cholera, depends almost entirely upon the stage in which the disease is seen. If in the stage of collapse, the case is almost hopeless. So that one physician might have ten cases, and all might recover; another might have the same number, and the treatment be equally judicious, yet nine out of the ten might die.

Nearly half of the cases that have been brought to this hospital, as far as my own experience extends, have been in the stage of collapse or bordering upon it. They were usually brought in late in the afternoon, and, of course, some hours after the inception of the attack. They have then been comatose, with cold surface, except that of the head, which is often very hot, feeble, frequent, and fluttering pulse, scarcely perceptible at the wrist, dilated and inactive pupils, respiration laboured, sometimes stertorous. Sometimes they have lain perfectly motionless and paralyzed, sometimes restless, sometimes in convulsions. Often, when in this state, under the application of a powerful stimulus to the surface, as burning alcohol to the legs, a patient has sprung up in bed, stared at those around him for a moment, asked for a drink, taken it, and then fallen back again into his former condition. In a less advanced or less severe stage of the disease, the patient has presented pretty much the same symptoms, but in a less marked degree. The pulse is frequent, but not so feeble and irregular; the pupils act feebly; the surface is cool, the head perhaps burning hot; patient is perhaps in a state of partial coma, from which he can be aroused, however, by addressing him by name in a loud tone. The respiration is quick and laboured, but not stertorous; sometimes he has convulsions, quasi epileptic; sometimes he is extremely restless, requiring to be held in bed. In a still earlier or less severe stage, the patient is perhaps able to walk with assistance; complains of intense pain in the head, which is usually hot. The extremities are cool; pulse not much altered, not hard or bounding. No infection of eyes; pupils rather dilated, if altered at all.

Perhaps one or two cases by way of illustration, and briefly stated, would not be amiss here.

C. 1st. A man, name unknown, about forty years of age, was brought to the hospital about noon, July 27th, 1848, and admitted under Dr. H. D. Bulkley. He had fallen in the street a short time previous to admission. Was in a state of complete coma, with laboured and irregular respiration, quick and fluttering pulse, head hot, pupils immovably dilated.

Treatment.—Sinapisms to feet, legs, and stomach. Ice to head, and stimulants. He survived but a few hours.

Autopsy, eighteen hours after death.—Brain normal. Lungs slightly congested—crepitant. Other internal organs healthy.

C. 2d. Michael Collyer, native of Ireland, labourer, was admitted under Dr. Griscom, Aug. 11th, 1848, in a state of insensibility, having fallen down in the street. Respiration stertorous, pupils dilated, pulse quick, feeble, and irregular.

Treatment.—Turpentine enema. Sinapisms to chest and limbs—stimulants freely. Patient survived for a short time.

Autopsy, eighteen hours after death.—Brain slightly congested; lungs emphysematous at some points; other organs healthy.

In these cases, as has been seen, there was no marked congestion of the internal organs. In nearly all the cases that occurred in 1850, there was well-marked congestion of these organs; sometimes of the lungs, sometimes of the brain. Thus, out of *eight* cases recorded in our books, there was congestion of the lungs in *two*, and of the brain in *four*. In one of the remaining two, there was apoplexy, and this man was bled in the hospital, being the only case out of the forty-two in which the lancet was considered admissible; the case proved fatal.

In the remaining case, there were well-marked epileptic convulsions; this

case terminated favourably. The congestion of the brain in two of the four cases was inferred from the symptoms as the cases recovered. In the others, it was revealed by a post-mortem inspection. In no case was *inflammation* of the brain or its membranes observed; and in all the cases the same course of treatment was pursued, with the above-mentioned exception. Cups were applied to the temples in the cases suffering from head symptoms, such as heat, dilated pupils, stertorous breathing, pain; but external and internal stimulation of the most active kind was indicated in all, except perhaps in those admitted in the first degree or stage of the disease. Sometimes the patient was placed in the warm bath, and, at the same time, the cold douche was applied to the head; this usually seemed to have some effect, though but temporary. In the cases which showed congestion of the brain, at the autopsy, the symptoms were still such as to require prompt stimulation, the only difference in the treatment being the local abstraction of the blood from the temples, and the application of ice to the head. I know of one case in private practice, in the year 1847, which occurred in a high liver, of apoplectic build, and showed marked symptoms of apoplexy. The attack yielded with some difficulty to large bleedings.

Insolation is almost uniformly nervous exhaustion, and is to be treated as such. We are not to bleed because the patient is a robust man, and has fallen in a fit at his work, which seems to be the only circumstance taken into consideration usually by the physician who is hurriedly summoned to such a case. The pulse is always a sure guide.

Case of Cæsarian Section. By H. M. JETER, M. D. [We transcribe from the *Southern Med. and Surg. Journ.* (March, 1851) the following most extraordinary case:—]

On the night of the 4th of December last, Mrs. B., aged thirty years, was taken in labour with her sixth child. I was called at 3 o'clock in the morning to attend her accouchement. I found her with weak and irregular pains, and was informed that such had been their character from the commencement of labour at 9 o'clock. Soon after, however, her pains began to increase, and upon examination per vaginam, I found the os tincae well dilated and the waters collected in large quantity. The back of the foetus presented; I waited until the mouth of the uterus was more completely dilated, and ruptured the membranes, discharging an immense quantity of water. I proceeded immediately to turn, so far as to bring down the breech, making a breech presentation. The difficulty attending the operation of turning was so great, in consequence of the extraordinary size of the child, (it being very large,) that I regarded it hazardous to attempt to complete the operation, and left it in this situation to the natural efforts of the womb. After about two hours of very hard labour the breech so far advanced as to enable me to bring down the feet. I essayed by every possible means to assist the efforts of the uterus, by making all the traction upon the inferior extremities of the foetus that was warrantable, being convinced that the foetus was dead.

Finding all efforts to make any further advance in its delivery entirely fruitless, I attempted to perforate the cranium, but found it impossible, in consequence of the size of the child, to pass the perforator up to its head. I then eviscerated the foetus, with the view of passing the instrument up within the cavity of the foetal thorax to the base of its cranium. This also failed to make room for the operation, without proceeding at random and great consequent hazard to the mother, as I could not insert the hand to give any certain direction to the instrument, the head still being entirely above the superior strait. Embryotomy was therefore determined upon, and after dissecting away the foetus up to its axillæ, which required about two hours, the mother all the while suffering the most severe labour, but which at this time had ceased to make any impression upon the child, and which induced me to conclude that the uterus had probably ruptured, I found her rapidly sinking, so much so, indeed, that we did not think that she could survive fifteen minutes longer. I determined at once to operate on the Cæsarian section. I gave my patient a stimulant, and, assisted by Dr. Reese, proceeded to make an incision along the linea alba, six inches in length, cutting down carefully to the peritoneum, upon dividing

which, the head of the fœtus presented, showing that my apprehensions were correct in the womb's having ruptured some time previous to the operation. The head of the child was so large that the incision had to be extended to ten inches in length to admit its passage. The head measured twenty-nine inches and four lines in its longitudinal or occipito-frontal circumference, and twenty-eight inches two lines in its perpendicular circumference, being hydrocephalic. The head and remaining portion of the body being removed, the placenta was found also without the uterus within the cavity of the abdomen, and the uterus contracted to about the size of a small cocoa-nut. This being also removed, the cavity of the abdomen was left filled with coagulated blood, from the hemorrhage which took place at the time of the rupture of the womb. Having carefully removed the blood as completely as possible, the wound was closed by the interrupted suture and adhesive straps, leaving a space of about two inches at its inferior extremity, for the discharge of the fluids that might remain or collect in the cavity of the abdomen.

Stimulants were given, and other applications made, to revive the sinking energies of the patient, which had become almost extinct. Reaction soon took place, and she was cleansed and placed in as comfortable a position as the circumstances would admit. The vital energies having been sufficiently resuscitated, opiates were given freely. She was kept quiet, and rested comfortably during the night and the following day, until about 9 o'clock on the succeeding night, (the 6th,) when she was taken with violent vomiting, which continued, with intermissions of not more than half an hour, until 10 o'clock the next day, at which time I arrived, having been called off the evening before, and could not return sooner.

We succeeded in soon checking the vomiting, and she rested easy, with occasional return of the vomiting during the day and following night.

Dec. 8th. Patient complains of some soreness about the womb, and over the abdomen generally, which is considerably swollen; pulse 132, and very restless. Administered a clyster, which produced two evacuations; gave her to drink small quantities of cream of tartar and lemonade.

9th. Patient complains of great soreness and tenderness of the abdomen, which is greatly swollen; tongue dry and red, and great thirst; pulse 140, quick and hard; lochial discharges ceased. Put her upon a treatment of calomel and opium; gave injections of warm milk and water per vaginam, and applied flannel, wet with spts. turpentine, to the abdomen.

10th. Soreness and tenderness not so great; discharges from the wound in the abdomen free; lochial discharges also free; pulse 136. Gave clyster, which produced one evacuation.

11th. Soreness and swelling still subsiding; pulse 130, more soft and full; lochial discharges and those from the wound in the abdomen continue freely. Gave small quantities of Dover's powder.

12th. Had one copious alvine discharge during the night, of natural consistence—says she feels much relieved since. The discharges all continue free; pulse 130; wound healing kindly. From this time, nothing of importance occurred to require noting. She continued to improve, and by the 18th day after the operation the wound was entirely healed.

I visited her yesterday for the last time, which was the 29th day since the operation, and found her sitting up by the fire, directing the domestic affairs of her family. Mrs. B. is a woman of apparently very feeble constitution, and had been confined to her bed, for two months previous to her labour, with general anasarca of the whole system.

On the Law governing the Distribution of the Striped and Unstriped Muscular Fibre.—Dr. H. F. CAMPBELL, Demonstrator of Anatomy in the Med. Col. of Georgia, offers some interesting observations on this subject in the *Southern Med. and Surg. Journ.* (March, 1851), and enumerates the following case as governing the distribution of striped and unstriped muscular fibre:—

“Wherever celerity and quickness of action is required in a muscle, under any circumstances, we find the striped fibre entering into its composition, without any regard whatever to voluntary or involuntary motion; and, further, that the vol-

untary or involuntary character of the muscle has no influence at all on the distribution of these two kinds of fibre. In the establishment of this view, we find arguments abundant throughout the whole muscular system. All the muscles of voluntary motion, it is true, are constituted of the striped fibre; for these are liable, at any time, to be called upon for the most rapid and energetic contraction. On the other hand, the involuntary muscles are found of an unstriped fibre, with the above-mentioned exceptions; but these exceptions we think sufficiently important to invalidate materially the law which refers this distribution to voluntary and involuntary function. In offering the suggestion above made, we have in view the substitution of it as a law which can be of universal application, for one which is embarrassed by exceptions, which this readily, and, to our mind, satisfactorily reconciles."

Prof. J. E. Cooke's Antilithic Paste.—R. Castile soap ℥iv; spermaceti ℥viii; Ven. turpentine ℥vj; oil aniseed ℥ij; turmeric ℥ij; honey, q. s. Rub the soap and spermaceti well together, then add the turmeric; after rubbing them well, add the turpentine and oil of aniseed, and sweeten with honey.

Of this paste, a piece the size of a nutmeg is given two or three times a day. The diseases in which it is most useful are those in which the mucous membrane is involved. There is a species of hoarseness which follows inflammatory action, and which often approaches aphonia, in which the paste is a valuable remedy. As a diuretic, it is highly extolled.—*West. Journ. Med. and Surg.*, Jan. 1851.

The Difficulty of Breathing from an Overdose of Opium relieved by Inhaling the Vapour of Water.—The difficulty of breathing, commonly met with in cases of poisoning with opium, is generally ascribed to paralysis of the respiratory muscles caused by the drug; but Dr. C. W. WRIGHT ascribes it (*Western Lancet*, Jan. 1851) to the dryness of the mucous membrane of the lungs, caused by the opium.

"It is absolutely necessary," he remarks, "that the mucous membrane of the lungs should be kept constantly moist, otherwise it is impossible for oxygen gas to be absorbed, and carbonic acid eliminated. It is observed, in some cases of poisoning with opium, that the mouth and fauces become so dry that it is almost impossible for the patient to swallow or speak, and that if the dose is sufficiently large, this dryness may extend into the respiratory organs, and thus give rise to great difficulty of breathing. In these cases the patient is not so much disposed to sleep as when this symptom is not observed.

"Having seen this effect of opium in several cases, I had determined to try the effect of the inhalation of the vapour of water in mitigating the unpleasant symptoms thus induced. This I was enabled to do in my own case, a short time since, from having taken by mistake an overdose of opium, which could not have been less than ten grains. In this instance, the first warning of the mistake I had committed was embarrassed respiration, which soon amounted to an agony, without the least symptom of narcotism. In this case much the same sensation was produced by each inspiration as is experienced by the inhalation of pure nitrogen gas, the air seeming to leave the lungs without having performed its functions, there being at the same time a sense of dryness in the fauces and larynx. In this condition I commenced breathing the vapour of hot water, which produced immediate relief. After this, having ejected the poison from the stomach by an emetic, no unpleasant effect followed.

"When it is remembered that the power which a membrane possesses of absorbing a gas is in proportion to its moisture, and that a dry one is as impenetrable to gases as horn, it is not surprising that the above symptoms should be induced by opium, which, above all other substances, has the property of diminishing the secretion of the mucous membranes. It should also be borne in mind that, by arresting the pulmonary secretion, the blood loses its attraction for the mucous membrane lining the lungs.*

"Probably the best treatment which could be adopted, where this symptom is

* See Liebig's late work on the motion of the juices in the animal body.

observed, would be to allow the patient to inhale the nitrous oxide gas saturated with vapour, which would have the effect of restoring the moisture of the lungs, and presenting oxygen in a much more soluble form than that which enters into the composition of the atmosphere.

Refraction of a Leg to Improve Defective Surgery.—Prof. MUSSEY, of Cincinnati, records, in the *Lancet* (Jan. 1851), a case of this occurring in a female who was thrown from a buggy and had both bones of the left leg broken in two places; one three and a half inches below the knee, the other two and a half inches above the ankle.

It was six weeks before the patient began to sit up in bed, and four months before she was able to ride out. She came to Cincinnati in July of the same year. Ever since the injury, the leg had been considerably swollen, and there had not been a day without more or less pain, sometimes severe, extending from the upper fracture to the heel, back of the foot and toes, indicating lesion or compression of the fibular nerves.

Both fractures were firmly consolidated. The lower fracture was well enough, exhibiting no deformity—at the upper one, the leg was sadly bent, exhibiting a prominent external convexity or angle, so great as to shorten the distance from the knee to the inside of the foot about an inch and a half: the plantar surface of the foot looking inward, and its outer edge looking directly downward. Of course, the limb was altogether useless in walking; any attempt to apply the foot to the ground aggravating the pain. It was impossible to place the sole of the foot down flat, or bring the heel within an inch of the ground. The limb was therefore left to swing, while Miss K. moved about upon the other leg and a pair of crutches.

In September, 1848, aided by his son, Dr. WM. H. MUSSEY, Prof. M. operated in the following manner. A firm pad, an inch and a half thick, was laid upon the inside of the knee, another upon the inside of the ankle, extending five inches up the leg. A splint of hard wood, one inch thick, and three inches wide, was laid, and secured by a bandage, upon these pads. A broad padded belt was placed over the angular projection of the fracture, and gradually tightened by a mechanical power, derived from Jarvis's adjuster, till the fracture was crushed, and the leg straightened.

The patient, having been placed under the influence of chloroform, was wholly unconscious of pain during the operation, and occupied herself all the while in singing sacred songs, and holding celestial conversation; and while a bandage and splint were being applied to maintain the new position of the limb, finding herself coming to earth again, she entreated most earnestly for more chloroform, to prolong the ecstatic illusion. After the operation, the pain in the leg and foot was diminished, and in two months the fracture was consolidated.

Dec. 12. There is now no pain at the heel, and comparatively little in the leg and foot. The limb has its natural direction, is as long, and apparently as strong as the other. She can now walk with a cane, and limpingly without one.

Feb. 1849. The patient now walks very well without crutch or cane, and only now and then feels slight pain in the leg, the nervous injury having been almost repaired. Some months after the above date, the patient was walking well in the street, as if nothing had happened.

Aphonia and Obstinate Cough from Prolongation of the Uvula. Dr. T. C. READY, of Lexington, Mo., records, in *St. Louis Med. and Surg. Journ.*, Jan. and Feb., 1851, the case of a young lady, who had been unable to speak above a whisper for over four years, during which period she suffered from incessant cough, which she said attacked her after exposure to cold. She had consulted many physicians without relief. Upon examination of the fauces, Dr. R. found the uvula enlarged to an enormous size, about one inch in length, hanging over the rima glottidis, and all the adjoining parts inflamed and engorged with blood. "I immediately came to the conclusion," he says, "that the secret of the

aphonia and coughing was an enlargement and prolongation of the uvula, and determined upon excision of the same, which I did, and in ten minutes after the operation, she could speak as loud as any one in the room, and has continued to improve, from day to day, ever since, so much so that she can now sing a tune in as good style as she could before her attack. A slight coarseness of the voice, and inability to execute high notes in singing, is all the difficulty she experiences. It is a curious fact in this case, that out of some half-dozen physicians who had before attended her, not one had ever examined her mouth and throat, and thus overlooked what would most certainly have relieved her years ago."

[In the second number of this Journal (Feb. 1828), the late Dr. PHYSICK related a case of obstinate cough caused by an elongated uvula, and cured by its excision. He also described an instrument devised by him for the operation.

The celebrated Wiseman, in his *Chirurgical Treatise*, published so long ago as 1676, states that a "frequent hawking" and "vexatious catarrh" is often produced by elongation of the uvula; and he relates a case in which he effected a cure by excising a portion of that organ. See book iv., chap. vii., obs. 8.

This condition of the uvula, we are led to believe, is a frequent cause of obstinate cough, and we take this opportunity of inviting anew the attention of practitioners to it.]

Two Cases of Mumps, with Metastasis to the Brain, both terminating fatally. Dr. HARVEY LINDSLY records (*The Stethoscope and Virginia Med. Gaz.*, Jan., 1851) the following examples of this rare accident:—

"In January, 1849, a son of Gen. W., who at the time was a student of medicine and attending the lectures of the medical school in this city, was attacked with the mumps, and after a few days' illness died, as I was informed, from metastasis of the disease to the brain. I cannot give the particulars of this case, as the patient was not under my professional care. On the first day of February following, about a week after the death of this young man, I was requested to see his brother, (ætat. 20,) a student of Princeton College, who was at home on a short visit to his friends. I found him labouring under a well-developed attack of mumps of the left side, the gland considerably swollen, and with some fever, though, on the whole, suffering but slightly, and feeling, as he remarked, very comfortable. The disease seemed to be taking its usual course, and, if it had not been for the recent death in the family, would have excited little interest or observation. As it was, however, his friends felt some anxiety, and I was induced to attend the case more carefully than I should have thought necessary under ordinary circumstances. As precautionary measures, I directed pretty active purgatives, followed by diaphoretics, hot pediluvia, warm flannel to the swollen gland, &c., and watched very closely for any indications of disease of the brain. I could detect nothing of the sort, however, and until the fifth day everything seemed to promise a favourable termination. I examined my patient carefully twice a day, with reference to the condition of the testicles as well as the brain. But there was no apparent disturbance of the functions of the one, and no enlargement of the other. He was cheerful, slept naturally, and felt confident of a speedy recovery. Upon examining him, however, on the morning of the fifth day, my apprehensions were excited by finding that he was labouring under *priapism*. I dreaded this symptom the more, as the disease seemed now to be taking the same turn that proved fatal in his brother's case. He was immediately ordered to be leeches freely at the base of the brain; a blister was applied to the nape of the neck, purgatives given, and an active general antiphlogistic treatment adopted. At the same time, additional professional advice was obtained. During the whole of this day, however, the priapism was the only indication we could detect of diseased brain.

On the next morning we were informed that he had been labouring under delirium the greater part of the night—had been restless, and suffered much. These symptoms continued to increase in violence, convulsions came on, and in a few hours death closed the scene on the sixth day of the disease and the second after the appearance of the priapism.

A careful examination of the brain was made thirty hours after death, when

decided marks of inflammation and congestion were found in the cerebellum, but none in the cerebrum.

Dislocation of the Radius and Ulna backwards at the Elbow.—Professor DUGAS has published (*Southern Med. and Surg. Journ.*, Jan. 1851) some interesting remarks on this accident, and relates briefly the following seven cases of it which have come under his observation:—

CASE I. Miss A. E. H., having sustained an injury of the elbow-joint by a fall from a moderate height, had been treated three weeks with discutient lotions and a nearly straight splint, when I was requested to see her. The attending physician, whom I met in consultation, not agreeing with me as to the nature of the accident, a third physician was called in, who differed from us both. The opinion of a fourth was now requested, and he fortunately concurred with me in the conviction that the bones of the forearm were dislocated backwards. The patient was immediately seated in a strong chair, with the injured arm projecting through the back of it. A little tobacco was put into her mouth to promote a relaxation of the muscles, and when nausea supervened, the dislocation was reduced by pulling the forearm strongly, and at the same time bringing it into a state of complete flexion around the vertical bar of the chair. The arm, being placed in a short sling, and occasionally moved, was, in the course of a few weeks, completely restored to its natural uses.

CASE II. This case presents nothing peculiar. It was that of a little girl from South Carolina, about seven years of age, who fell from a chair, and dislocated the elbow-joint. She was sent to me a few days after the accident; the nature of the injury was detected, and reduction immediately effected as in the above case, but without the use of tobacco.

CASE III. Mr. St. J. (about thirty years of age) was thrown from his horse with great force, a short distance from the city. It was probably two hours after the accident that I saw him. The arm was semi-flexed, and the tumefaction of the elbow-joint immense. Another physician was requested to see him with me, but differed with me as to nature of the injury. The joint was, therefore, covered with cold lotions, and gently splinted until the next day, when I succeeded in convincing my *confrère* that we had to deal with a dislocation of the joint. The reduction was effected by drawing the forearm around the bedpost until flexion was complete. The case terminated successfully.

CASE IV. Mr. W., from one of the lower districts of South Carolina, about twenty years of age, in falling from his horse sustained an injury of the elbow-joint, which was treated with lotions and splints for six weeks before he called upon me. The arm was nearly straight from the continued use of splints, and possessed very limited motion at the elbow. The tumefaction having entirely subsided, the dislocation of both bones backwards was very obvious. After making, in vain, every effort that prudence would permit to reduce the dislocation, I ventured upon the subcutaneous section of the triceps extensor cubiti, just above its attachment to the olecranon, thinking it possible that, by removing what then seemed to be the greatest obstacle to the flexion of the forearm, I might succeed in bending it, and that, even if he lost the use of this important muscle, the permanent flexion of the arm would be better than a permanent straightness. I did, then, succeed in bringing the forearm nearly to a right angle, but without reducing the dislocation. The patient was directed to move the arm daily, and to shorten the sling in which it was kept, from time to time. About five years have now elapsed since the operation, and I have not heard the result.

CASE V. This was a case somewhat similar to the last. The gentleman (about twenty-five years of age) resided in one of our upper counties, and had been treated several weeks under a misapprehension of the nature of the injury. He then came to this city, and placed himself under the charge of another physician. I was called in consultation, and we detected a dislocation of the elbow backward. My professional associate administered chloroform, and made every effort to reduce the dislocation, in vain. Under the influence of the powerful aid of Jarvis's adjuster, the attempt to flex the arm resulted in the fracture of the olecranon. This permitted considerable motion of the joint, and the patient left here much improved in that respect—but with the dislocation still existing.

CASE VI. This is the case of a robust Irish labourer, whose dislocation was of some weeks standing, when I was requested to assist a professional brother in its reduction. Chloroform was administered, and the most strenuous exertions made without succeeding in the reduction.

CASE VII. F. W., a boy seven years of age, fell from a platform about four feet high, and dislocated the bones of the forearm backwards at the elbow-joint. Seeing him a few hours after, the dislocation was readily reduced by traction with my right hand, whilst the other was applied to the bend of the arm so as to press back the bones.

It will be remarked that of the seven cases above reported, three remained with permanent deformity—and that this result was, in these three cases, the consequence of incorrect diagnosis. With these facts before us, the writer trusts that this communication may not appear to be altogether a work of supererogation.

An Act to promote Medical Inquiry and Instruction.—[The following act has been introduced by Mr. TUTHILL, in the Assembly of the State of New York, March 13, 1851. It has been read twice, and referred to the committee on medical societies and colleges—reported from said committee, and committed to the committee of the whole.]

The People of the State of New York, represented in Senate and Assembly, do enact, as follows:—

SEC. 1. Any physician or surgeon, duly qualified according to the law of this State, or any medical student under the authority of any such physician, may have in his possession human bodies, or parts thereof, for the purposes of anatomical inquiry or instruction.

SEC. 2. Either of the following board of officers, to wit, the overseers of the poor of any town of this State, and the commissioners of health, the city inspector, or the mayor and aldermen of any city of this State, may surrender the dead bodies of such persons as are required to be buried at the public expense, to any regular physician, duly qualified according to law, to be by him used for the advancement of anatomical science; preference being always given to the medical schools, by law established in this State, for their use in the instruction of medical students.

SEC. 3. No such dead body shall in any case be so surrendered, if the deceased person, during his last sickness, requested to be buried, or if, within the twenty-four hours after his death, any person claiming to be of kindred or a friend to the deceased, and satisfying the proper board thereof, shall require to have the body buried, or if the deceased person was a stranger, or traveller, who suddenly dies there, making himself known; but the dead body shall in all such cases be buried.

SEC. 4. Every physician shall, before receiving such dead body, give to the board of officers surrendering the same to him a sufficient bond that each body, so by him received, shall be used only for the promotion of anatomical science or instruction, and that it shall be used for such purpose within this State only, and so as in no event to outrage the public feeling.

[We trust this act will receive the sanction of the legislature, and the code thus be relieved from the glaring injustice and inconsistency of requiring from physicians, under a heavy penalty, a knowledge of anatomy, and forbidding them, by equally severe penalties, from having recourse to the sole means of acquiring it.]

American Medical Association.—The fourth annual meeting will be held on the first Tuesday (6th) of May, and *not on the second Tuesday*, as announced in some of the journals.

“The Committee of Arrangements request all societies and other institutions authorized to send delegates, to forward a correct list of those selected to attend the next annual meeting to the Secretary, Dr. H. W. De Saussure, at Charleston, S. C., on or before the first day of April.

“In consequence of the resignation of Dr. Stillé, one of the Secretaries, from ill health, all communications intended for the next meeting of the Association must be addressed to the remaining Secretary, Dr. H. W. De Saussure, Charleston, S. C.”

I N D E X.

- Abortion, decision in an indictment for procuring, 525
 ——— law of Virginia concerning, 525
 ——— procuring of, 526
 ——— produced by savin, 529
 Abscess in cerebellum, 101
 ——— in vesicula seminalis, 168
 Absorption of alimentary substances, 457
 Abstinence, cases of, 55
 Acephalous fetus, 339
 Acetate of potash in gonorrhœa, 242
 Act to promote medical inquiry and instruction, 544
 Adams, hæmoptysis neonatorum, 364
 Addison, repair and limitations of cure, 197
 Adipose sarcoma of thigh, 387
 Adulteration of lac sulphuris, 183
 Air, uses and abuses of, 449
 Albuminous urine, proximate cause of, 155
 American Medical Association, Transactions of, 111
 Amputations, statistics of, 178
 ——— primary and secondary, 238
 Anæsthesia and anæsthetics, 429
 ——— in midwifery, 249
 Ancell, chemistry of tubercle, and anatomy of tuberculosis, 462
 Aneurism of femoral artery, ligature of external iliac, 239
 ——— subclavian, 53
 ——— scrofulous abscess simulating, 157
 Ankle, sprains of, 235
 Antilithic paste, 540
 Appendix vermiformis, gangrene of, 51
 Aran, abortive treatment of small-pox, by collodion, 479
 ——— chloroform in lead colic, 484
 Arsenic, poisoning by, 91
 Aschendorf, death from chloroform, 257
 Atropine, preparation of, by means of chloroform, 203
 Atrophy of spinal marrow, 476
 Auscultation and percussion, combination of, 479
 ——— in pneumonia of infants, 480
 Axilla, gunshot wound of, 294
 Aztec children, 285
 Bacon, dumb-bell urinary deposit, 297
 Bagot, evil effects from inhalation of chloroform, 458
 Barker, child born in the beginning of the sixth month, and reared, 257
 Barnes and Sachs, anæsthesia in midwifery, 249
 Basham, stricture of œsophagus, 153
 Baudens, sprains of ankle, 235
 Bazin, treatment of itch, 485
 Beaumont, disarticulation of condyle of lower jaw, 162
 Beck, medical jurisprudence, 417
 Becquerel, treatment of typhoid fever, 207
 Bed sores, cotton wadding to, 576
 Bernard, absorption of alimentary substances, 457
 Bethune, melanosis of eyeball, 41
 Betz, bronchocele of new-born infants, 221
 Bigelow, fracture of lumbar vertebra, 49
 Billing, first principles of medicine, 448
 Bird, operations for ovarian disease, 234
 Birkett, diseases of breast, 172
 Bladder, gun-shot wound of, extraction of bullet from, 157
 ——— tumour of, 83
 Blanchard, protection of pills of iodide of iron, from the air, 204
 Blizard, hematocele of tunica vaginalis, 160
 Blood, influence of salt diet on, 199
 Bond, dental medicine, 444
 Boston Society for Medical Improvement, extracts from records of, 38, 319
 Boudin on cretinism, 483
 Bourignon, treatment of itch, 485
 Boussingault, influence of salt diet in fattening cattle, 199
 Bowditch, hæmoptysis, 333
 ——— case of sudden death, 323
 Bowman, hematocele of spermatic cord, 106
 Boyer, surgical operations in reference to chloroform, 238
 Brain of new-born child, injury of, recovery, 524
 ——— weight of at different periods of life, 451
 Breast, diseases of, 172
 Bright's disease, pathology of renal blood-vessels in, 155
 Bromide of potassium, action of, 199
 Bromine, poisoning by, 262
 Bronchocele of new-born infants, 221
 Bronchus, foreign body impacted in, 141
 Brown, laryngitis, 38
 Brucke, structure and uses of Peyer's glands, 195
 ——— mechanism of inflammatory process, 205
 Burn on ventilation, 194
 Burnett's fluid, poisoning by, 165
 Butler, hydrangea arborescens in lithiasis, 286

- Buttons in the intestines, 326
 Byford, typhoid fever at Mount Vernon, Ind., 61
- Cæsarion section, 245, 521, 522, 538
 ——— and premature labour, 523
 ——— operation, causes of non-success, 243
- Caillault, stethoscopic sign of detachment of placenta, 247
- Calcis, excision of, 162
- Callaway, dislocations and fractures of the clavicle and shoulder-joint, 127
- Campbell, law governing the distribution of striped and unstriped muscular fibre, 539
- Cancer, is fibre an essential element of, 465
- Cantharidal ether, and cantharides, &c., 203
- Carcinoma of large intestine, 39
 ——— of lung, 46
- Cardiac dropsy, treatment of, 209
- Carrot-juice, as a nourishment for infants, 201
- Cataract operations, preparatory treatment in, 516
- Cazentre, therapeutic properties of cedron, 202
- Cedron, therapeutic properties of, 202
- Chamberlaine, general paralysis, 101
- Chambers, treatment of obesity, 488
- Chaplin, poisoning by corrosive sublimate, 49
- Chevalier, diseases to which the manufacturers of sulphate of quinine are liable, 528
- Child born in sixth month and reared, 257
- Chlorinated hydrochloric ether, effects on animals, 459
- Chloroform, death from, 257
 ——— Marshall Hall on use of, 495
 ——— use of at St. Bartholomew's Hospital, 498
 ——— surgical operations in reference to, 238
 ——— evil effects from inhalation of, 458
 ——— in lead colic, 484
- Cholera, chemical researches on nature and cause of, 151
 ——— treatment of, 76
 ——— evacuations, salts in, 198
 ——— epidemic, 217
- Chorea and diseases of the heart, 485
 ——— sulphate of zinc in, 486
- Church, femoral aneurism cured by compression, 535
- Citrate of soda, 204
- Clarke, tumour of bladder, 83
- Clarkson, complete intestinal obstruction, colon opened in the loin, 147
- Coale, poisoning by corrosive sublimate, 47
 ——— encysted ovarian tumour, 331
- Cocculus indicus, poisoning with, 527
- Cod-liver oil in tubercular disease, 21
 ——— in diseases of the eye, 532
 ——— in phthisis, 225
- Coffee and caffeine, therapeutic employment of, 200
- College of Physicians of Philadelphia, proceedings of, 183
- Collodion in small-pox, 479
- Compression, femoral aneurism cured by, 512, 535
- Cooke, antilithic paste, 540
- Coup de soleil, 183, 536
- Corrosive sublimate, poisoning by, 47, 49, 79
- Coste, human gestation, 247
- Cotting, imperforate rectum, 336
 ——— calculus in abscess about tonsil, 337
- Cotton wadding to bed-sores and varicose ulcers, 516
- Coulson, anatomy of the subcutaneous bursæ, 452
 ——— treatment of enlarged subcutaneous bursæ, 500
- Craninx, vaccination and re-vaccination, 477
- Crawford, absence of uterus, 268
- Cretenism, 349, 483
- Crucial ligament of knee-joint, rupture of, 515
- Curare, researches on, 528
- Curling, absence of thyroid body, 166
- Dalton, new form of phosphate of lime in putrefying urine, 368
- Demonstrative midwifery, 270
- Dengue, 263
- Dickson, dengue, 263
- Dislocation of shoulder-joint, 75
 ——— of scaphoid bone of foot, 237
 ——— of radius and ulna backwards, 543
- Dorvault, iodognosis, 461
- Drummond, ligature of femoral artery, 239
- Dry gangrene, 241
- Duclos, cod-liver oil in phthisis, 225
- Duffin, case of ovariectomy, 226
- Dugas, gangrenopsis, 267
 ——— dislocation of radius and ulna backwards, 543
- Dulcamara, poisoning with, 257
- Dumb-bell crystals, relation of to uric acid and oxalate of lime, 259
 ——— urinary deposits, 297
- Dunglison, new remedies, 447
- Durwell, forced flexion for arresting hemorrhage in wounds of palmar arch, 239
- Dwarfs, Indian, 285
- Ear, polypus of, 337
- Ebert, inunction in scarlatina, 225
- Ehrmann, polypus of larynx, 410
- Elastic fibres in sputa of phthisis, 465
- Encephaloid disease between rectum and bladder, and of liver, 323
- Encysted tumour containing feces, 390
- Epigastric and obturator arteries, origin of, by a common trunk from internal iliac, 239
- Etherization, certain phenomena of, 319
- Evans, treatment of rubeola by inunction, 267
- External iliac, ligature of, 239
- Eye-ball, melanosis of, 41
- Eye, extirpation of, 331
- Farrège, polypous excrescences from umbilicus, 524
- Femoral aneurism, cured by compression, 512, 535
 ——— artery, ligature of, 239, 268
- Femur, excision of head of, 508
- Field, complete intestinal obstruction, colon opened in loin, 147

- Flourens, effects of chlorinated hydrochloric ether on animals, 459
 Forbes, foreign body impacted in bronchus, 141
 Fosgate, sleep psychologically considered, 439
 Fracture of first lumbar vertebra, 49
 Frick, renal affections, 171
 — relation of dumb-bell crystals to uric acid, 259
 Gangrenopsis, 267
 Gardette on importance of establishing a lectureship on dentistry in medical colleges, 533
 Gestation, human, 247
 Gilbert's cases in surgery, 70
 Goitre, causes and cure of, 483
 Gonorrhœa, acetate of potash in, 242
 Gray, protrusion of hand through walls of vagina and rectum, 519
 Guerard, hydrocephalus, 109
 Guichon, neutral citrate of soda, 204
 Gumprecht, carrot-juice, nourishment for infants, 202
 Gun-shot wound of left axilla, 294
 Guterbock, salts in cholera evacuations, 198
 Hæmoptysis neonatorum, 364
 Hall, Marshall, on use of chloroform, 495
 Hand, protrusion of, through recto-vaginal septum, 519
 Hannon, therapeutic employment of coffee and caffeine, 200
 Hare-lip, treatment of, 505
 Hayward, statistics of amputations, 178
 Heart, valvular diseases of, 213
 — structure of muscular substance of, 195
 — fatty diseases of, 157
 — diseases of, and chorea, 485
 Helfft, recent epidemic of scarlatina at Berlin, 482
 Hematocele, cases of, 160
 Hemorrhage in wounds of palmar arch, forced flexion for arresting, 239
 Henry, abscess in vesicula seminalis, 168
 Hernia with ileus, 166
 Hewett, morbid growth from upper jaw, 491
 Hilton, acetate of potash in gonorrhœa, 242
 Holmes, microscopical anatomy, 339
 Homans, buttons in the intestines, 326
 Hooper, extirpation of eye for orbital tumour, 331
 — polypus of ear, 337
 Horn, terminations of olfactory nerve, 195
 — extirpated from forehead, 50
 Hospital gangrene, 240
 Household surgery, 177
 Huette, action of bromide of potassium, 199
 — hydriodic ether, 203
 Hunt, absence of milk after delivery, 525
 Hydrangea arborescens in lithiasis, 268
 Hydriodic ether, 203
 Hydrocephalus cured by hydriodate of potass, 109
 Hydrophobia, cure of, 97
 Hyndman, collection of pus in uterus, 327
 Identity, 524
 Idiocy, 349
 Impotence, ancient trial for, 525
 Infant weighing twenty pounds, 340
 Inflammatory process, mechanism of, 205
 Inhalation of various medicinal substances, 458
 Insane asylums in France, 442
 Intermittent fever in Boston, 52
 Inunction in scarlatina, 225
 Iodide of iron, protection of pills of from air, 204
 Iodides, action of, 461
 Iodognosis, 461
 Iritis with amaurosis, 260
 Itch, treatment of, 485
 Jackson, carcinoma of large intestine, 39
 — encephaloid tumour between rectum and bladder, 323
 — disease of liver and stomach, 324
 — acute nephritis, latent, 330
 — hot water in sprains, 344
 Jacob, preparatory treatment in cataract operations, 516
 Japanese remedy for sterility, 249
 Jauzer, examination of the genital organs of a young woman assassinated during menstruation, 248
 Jenner, identity or non-identity of the specific cause of typhoid, typhus, and relapsing fever, 144
 Jeter, Cæsarian section, 538
 Johnson, proximate cause of albuminous urine, and pathology of Bright's disease, 155
 — male infant weighing twenty pounds, 341
 — separation of cervix uteri during labour, 342
 — value of chemical and microscopical examination as a means of diagnosis in renal diseases, 466
 — cases of renal disease, 467
 — diagnosis of fatty degeneration of kidney, 374
 Jones, albuminous and fatty urine, 169
 — cotton wadding as a dressing to bed-sores and varicose ulcers, 516
 Keating, poisoning from eating peach-kernels, 191
 Kelly, inversion of clitoris and urethra, 261
 Kidneys, value of a chemical and microscopical examination of the urine as a means of diagnosis in diseases of, 466
 — cases of disease of, 467
 — fatty degeneration of, 474
 Kilgour, treatment of cardiac dropsy, 209
 Kneeland, affection of olfactory nerves, with loss of smell, 41
 — certain phenomena of etherization, 319
 — idiotic crania, idiocy and cretinism, 349
 Knee-joint, rupture of crucial ligament of, 515
 Knox, vaccination as a preventive of small-pox, 477
 Lacteals, functions of, 457

- Lac sulphuris, adulteration of, 183
 Lagae, injury of cranium and wound of brain in a new-born child, recovery, 524
 Laryngitis, with inflammation of submucous cellular tissue of trachea, 38
 Larynx, polypus of, 410
 Lead colic, chloroform in, 484
 — use of in manufacture of sugar, 258
 Leclayse, fungous tumour of rectum, 242
 Lee, speculum in uterine diseases, 163
 — fibro-calcareous tumours and polypi of uterus, 164
 — Cæsarian section and premature labour, 523
 Legendre, diagnosis of tapeworm from the nervous symptoms, 223
 Lente, sun-stroke, 536
 Letheby, poisoning by Burnet's fluid, 165
 Levick, phthisis pulmonalis, and on cod-liver oil in tubercular disease, 21
 Lindsly, mumps, with metastasis to brain, 542
 Little, puerperal convulsions, 87
 Liquor amnii, excessive, 334
 Liver, encephaloid disease of, 323, 324
 Lloyd, treatment of hare-lip, 505
 Lower jaw, disarticulation of left condyle of, 162

 Macintyre, mollities and fragilitas ossium, 159
 — report of service of Dr. Hays in Wills Hospital, 531
 MacIachlan, scrofulous abscess of anterior mediastinum, 157
 Macpherson, gun-shot wound, extraction of bullet from bladder, 157
 Malignant tumour on tibia, 337
 Martini, dry gangrene, 241
 Max-simon, oæna, 222
 McIlvaine, surgical cases, 387
 McSherry, treatment of cholera, 76
 Medico-chirurgical transactions, 141
 Medullary cells of bone, 339
 Meigs, adulteration of lac sulphuris, 183
 — woman and her diseases, 193
 Melanosis of eyeball, 41
 Mench, ovariectomy, 268
 Menstruation, examination of genital organs of a woman assassinated during, 248
 Mental hygiene, 176
 Milk, absence of, after delivery, 525
 Morland, extracts from Records of Boston Society for Medical Improvement, 38, 319
 Mumps, epidemic, 219, 220
 — with metastasis to brain, 542
 Murphy, review of chemistry for students, 448
 Muscular fibre, striped and unstriped, law governing distribution of, 539
 Mussey, refracture of leg to remedy defective surgery, 541

 Namias, atrophy of spinal marrow, 476
 Neill, stricture of mucous membrane of stomach, 13
 — peculiarities of sphenoid bone, 191
 Nephritis, acute latent, 330
 Nerves, remote effects of, injuries of, 306
 Nightmare, caused by elongation of uvula, 222

 Nimmo, Cæsarian operation, 245
 Norman, ovariectomy, 509
 Nunnely, anæsthesia and anæsthetic substances, 429
 — hydriodic ether, 203

 Obesity, treatment of, 488
 Œdema of glottis, 40
 Oettinger, cantharidal ether, taffetas, ointment, collodion, 203
 Oldham, Cæsarian section, 522
 Olfactory nerve, termination of, 195
 Opium, difficulty of breathing from an overdose of, relieved by inhaling vapour of water, 560
 Ovarian tumour, encysted, 331
 — tumours, spontaneous disappearance of, 509
 Ovariectomy, 226, 268, 371, 509, 511
 Ovary, displacement of, 255
 Oæna, 222

 Page, excision of os calcis, 162
 Paget, open urachus, 165
 Palmar arch, forced flexion for arresting hæmorrhage in wounds of, 239
 Paralysis, local, in infancy, 481
 Parkman, tracheotomy for Œdema of glottis, 40
 — excision of superior maxillary bone, 52
 Parsons, remote effects of injuries of nerves, 306
 Patterson, iritis with amaurosis, 260
 Peach-kernels, poisoning by, 191
 Peacock, weight of the brain at different periods of life, 451
 Peaslee, double ovarian dropsy, ovariectomy, 371
 Pelouse and Bernard, researches on curare, 528
 Pennell, stricture of rectum, artificial anus in left lumbar region, 163
 Pepper, coup de soleil, 183
 — pseudo-membranous croup, 185
 Perineum, central laceration of, 520
 Peyer's glands, structure and uses of, 195
 Phosphate of iron, new preparation of, 462
 Phthisis pulmonalis, cases of, treated in Pennsylvania Hospital, 21
 — prolonged expiratory murmur as a sign of incipient, 169
 — cod-liver oil in, 225
 — elastic fibres in sputa of, 465
 Picrotoxine, effects of, 460
 Placenta, stethoscopic sign of detachment of, 247
 Plaetschke, poisoning with dulcamara, 257
 Pneumonia of infants, percussion in, 480
 Poisoning by corrosive sublimate, 47, 49, 79
 — by arsenic, 91
 — by peach-kernels, 191
 — with dulcamara, 257
 — statistics of, 258
 — with cocculus indicus, 527
 Poggiale, influence of salt diet in blood, 199
 Polypus, excrescences from umbilicus of new-born children, 524
 — of larynx, 410
 Pope, ligation of femoral artery, 268

- Popliteal aneurism, 239, 268
 Premature birth, procuring of, 526
 Pseudarthrosis permanent, 107
 Pseudo-membranous croup, 389
 Puerperal convulsions, 87
 ——— fever, 335
- Quain, fatty diseases of heart, 157
 Quintuple birth, 524
- Rabourdin, preparation of atropine by means of chloroform, 203
 Radius and ulna, dislocation of backwards, 543
 Rainey, round ligament of uterus, 455
 Ready, aphonia and cough from prolongation of uvula, 541
 Rectum, fungous tumour of in children, 242
 ——— stricture of, artificial anus in left lumbar region, 163
 ——— imperforate, 336
 Redfern, origin of epigastric and obturator arteries by a common trunk from internal iliac, 239
 ——— is fibre an essential element in structure of cancer, 465
 Redwood, use of lead in manufacture of sugar, 258
 Refracture of leg, 541
 Remack, structure of muscular substance of heart, 195
 Renal diseases, 466, 467
 ——— affections, Frick on, 171
 Ressiguier, epidemic mumps, 220
 Restelli, primary and secondary amputations, 238
 ——— hospital gangrene, 240
 Re-vaccination in Prussian army, 478
 Ricord, illustrations of syphilis, 426
 Rigby, displacement of ovary, 255
 Rilliet, epidemic mumps, 219
 Robertson, fistula of stomach, 457
 Robinson, poisoning by arsenic, 91
 Roger, combination of auscultation and percussion, 479
 Roubaix, causes of non-success of Cæsarian operation, 243
 Routh, new preparation of phosphate of iron, 462
 ——— physiological effects of picrotoxine, 460
 Rubeola, treatment by inunction, 267
- Salisbury, abortion brought on by savin, 529
 Sanitary commission of Massachusetts, report of, 391
 Savin, abortion produced by, 529
 Sayre, poisoning by bromine, 262
 Scaphoid bone, dislocation of, 237
 Scarlatina, epidemic of, at Berlin, 482
 ——— inunction in, 225
 Schroeder Van der Kolk, elastic fibres in sputa of phthisis, 465
 Scirrhus tumour of rectum and bladder, 329
 Shattuck, report on sanitary survey of Massachusetts, 391
 Shoulder-joint, dislocations and fractures of, 127
 ——— amputation at, 338
 ——— dislocation of, 75
- Simple valvular diseases of the heart, 213
 Simpson, local paralysis in infancy, 481
 Skey, use of chloroform at St. Bartholomew's Hospital, 498
 Sleep psychologically considered, 439
 Smith, treatment of pseudarthrosis, 107
 ——— ligature of external iliac, 239
 Smyly, femoral aneurism cured by compression, 512
 Snow, inhalation of various medicinal substances, 459
 Solly, ileus complicated by hernia, 166
 Soubervielle, horn extirpated from forehead, 50
 South, household surgery, 177
 Speculum in uterine diseases, 163
 Sphenoid bone, peculiarities of, 191
 Spinal marrow, atrophy of, 476
 Sprains, hot water in, 344
 ——— of ankle, 235
 Sputa of phthisis, elastic fibres in, 465
 Staphyloma, convex, 531
 Stark, rupture of crucial ligament of knee-joint, 515
 Sterility, Japanese remedy for, 269
 Stomach, fistula of, 457
 ——— structure of mucous membrane of, 13
 Storer, collection of pus in uterus, 327
 ——— carcinoma of lung, 46
 ——— excessive liquor amnii, 334
 ——— gangrene of appendix vermiformis, 51
 ——— puerperal fever, 335
 Strangulated inguinal hernia, 388
 Stricture, new instruments for, 513
 ——— of œsophagus, 153
 Subclavian aneurism, dissection after operation, 53
 Subcutaneous bursæ, anatomy of, 452
 ——— bursa, treatment of enlarged, 500
 Sulphate of quinine, diseases to which manufacturers of are liable, 528
 ——— of zinc in chorea, 486
 Sun-stroke, 536
 Superior maxillary bone, 52
 Sutton, typhoid fever, 418
 Sweetser, mental hygiene, 176
 Syphilis, illustrations of, 426
- Tamplin, ununited fracture of tibia, 237
 Tapeworm, diagnosis of, 223
 ——— causes and symptoms of, 224
 Taste and smell, identity of, 41
 Taylor's Medical Jurisprudence, 417
 ——— dissection of a case in which ovariotomy had been attempted twenty-five years before, 511
 ——— cases of abstinence, 55
 Thatcher, central laceration of perineum, 520
 Thayer, intermittent fever originating in Boston, 52
 Thompson, chemical researches on nature and cause of cholera, 151
 ——— prolonged expiratory murmur as a sign of incipient phthisis, 169
 Thyroid body, absence of, 167
 Tibia, ununited fracture of, 237

- Tilt, diseases of menstruation, ovarian inflammation &c., 448
- Townsend, acephalous fœtus, 339
- Toynbee, on non-vascularity of certain animal tissues, 457
- Tracheotomy for croup, 389
- for removal of foreign bodies, 74
- for œdema of glottis, 40
- Trousseau, auscultation in pneumonia of infants, 480
- Tubercle, chemistry of, 462
- Tubercular disease, cod-liver oil in, 12
- Tuberculosis, pathology of, 462
- chorea and diseases of the heart, 485
- Typhoid fever, treatment of, 207
- Sutton on, 418
- at Mt. Vernon, Ind., 61
- Typhus, typhoid, and relapsing fevers, identity or non-identity of cause of, 144
- Umbilicus, polypous excrescences from, 524
- Ununited fracture of tibia, 237
- Urachus, open, 165
- Urine, albuminous and fatty, 169
- new form of phosphate of lime in, 368
- value of a chemical and microscopic examination of, as a means of diagnosis in renal diseases, 466
- Uterus, absence of, 268
- collection of pus in, 327
- fibro-calcareous tumours and polypi of, 164
- round ligament of, 455
- separation of cervix during labour, 342
- speculum in diseases of, 163
- Uvula, aphonia from prolongation of, 541
- nightmare caused by elongation of, 222
- Vaccination as a preventive of small-pox, 477
- and re-vaccination, 477
- Valvular diseases of heart, 213
- Vanden-Corput, therapeutic employment of coffee and caffeine, 200
- Varicose ulcers, cotton wadding to, 516
- Variola, treated by collodion, 479
- Ventilation, 194
- Vertebra, fracture of first lumbar, 49
- Vesicula seminalis, 168
- Wakley, new instruments for stricture, 513
- Walker, dislocation of scaphoid bone of foot, 237
- on ventilation, 194
- Walton, excision of head of femur, 508
- Ware, puerperal fever, 335
- Warren, appearances on dissection after ligature, for subclavian aneurism, 53
- address before the American Medical Association, 447
- cancerous tumour of arm, amputation at shoulder-joint, 338
- Indian dwarfs, 285
- malignant tumour from periosteum of tibia, 337
- scirrhus tumour of rectum and bladder, 329
- Watson, ligature of left subclavian, 294
- femoral aneurism cured by compression, 535
- Wawruch, causes and symptoms of tape-worm, 224
- Webster, Provincial Insane Asylums in France, 442
- West, nightmare caused by elongation of uvula, 222
- Cæsarian section, 521
- Williams, poisoning by corrosive sublimate, 79
- Japanese remedy for sterility, 249
- epidemic cholera, 217
- Wilson, hydrophobia, 96
- Woman and her diseases, 193
- Wound, legal definition of, 526
- Wright, difficult breathing from an overdose of opium relieved by inhaling vapour of water, 540
- Yeoman, consumption, 449

GRADUATES OF JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA,

MARCH, 1851.

At a Public Commencement, held on the 8th of March, 1851, the degree of **DOCTOR OF MEDICINE** was conferred on the following gentlemen by the **HON. EDWARD KING**, President of the Institution; after which a Charge to the Graduates was delivered by **PROFESSOR MÜTTER**.

NAME.	STATE.	SUBJECT OF THESIS.
Abbott, William B.	Virginia.	Remittent Fever.
Albright, Durant H.	North Carolina.	Menstruation and its Diseases.
Armistead, William B.	Alabama.	Typhus.
Baily, Elisha S.	Pennsylvania.	{ Peculiarities of the Fœtal Circulation.
Baily, R. Jones	Pennsylvania.	{ Anatomy and Physiology of the Cerebellum.
Barber, James K.	Ohio.	Ergot.
Bateman, Ephraim	New Jersey.	History of Syphilis.
Bates, James M.	Maine.	Acute Pneumonia.
Battle, Lucius Lucullus (M. D.)	Tennessee.	{ Deleterious effects of Atmospheric Air when introduced into the Venous System.
Beaver, Ephraim K.	Pennsylvania.	{ Responsibilities of the Medical Profession.
Berry, William Frederic	North Carolina.	Typhoid Fever.
Black, Abraham	Virginia.	Delirium Tremens.
Bly, Douglas	New York.	{ Reduction of the Femur without extension when Luxated on the Dorsum Ilii.
Bobb, William H.	Pennsylvania.	Cathartics.
Booth, William C.	Virginia.	Autumnal Remittent Fever.
Boswell, John J.	Virginia.	{ Comparative Physiology of Digestion.
Brannock, James M.	North Carolina.	Typhoid Fever.
Brinker, Reuben	Pennsylvania.	Acute Meningitis.
Brooks, John G.	Maine.	Acute Gastritis.
Brownrigg, John	Mississippi.	Congestive Fever.
Brubaker, Henry	Pennsylvania.	Acute Pleurisy.
Burnett, Elisha G.	New York.	Ergot.
Campbell, Algernon E.	Virginia.	Pneumonia.
Carnal, Reuben H.	Louisiana.	Typhoid Fever.
Carriger, John H.	Tennessee.	{ The Young Physician; his Hopes, Fears, and Responsibilities.
Carrington, Paul S.	Virginia.	Pneumonia.
Carter, Flournoy	Georgia.	Pneumonia.
Cary, Charles W.	Virginia.	Arsenic and its Compounds.
Cheney, Francis M.	Georgia.	Typhoid Fever.
Christian, William S.	Virginia.	{ "Propter solum Uterum Mulier est id quod est."
Coleman, Charles T.	Virginia.	Digestion.
Coleman, Richard M.	Virginia.	Urinary Calculi.
Collins, Thomas B.	New York.	Pathology of Pneumonia.
Conner, William H. H.	North Carolina.	Pneumonitis.
Cook, Columbus L. (M. D.)	North Carolina.	{ Importance of Study to the Medical Practitioner.
Cook, George H.	Pennsylvania.	{ Sympathy between the Mind and Body.
Couse, George	Canada.	Delirium Tremens.
Craig, James W.	New York.	Local Blood-letting.
Crouse, William	Pennsylvania.	Dysentery.
Cutliff, James S.	Louisiana.	Embryogeny.
Dana, Charles H.	Pennsylvania.	Cynanche Trachealis.
Davidson, Henry G. (M. D.)	Virginia.	{ Comparative Anatomy and Physiology of the Digestive System.
Dickson, James G.	Pennsylvania.	Lymphosis.
Dingee, Richard	Pennsylvania.	Hygiene.
Dingley, Amasa J.	Maine.	Morbid Conditions of the Blood.
Duffey, John W.	Georgia.	Acute Hepatitis.

NAME.	STATE.	SUBJECT OF THESIS.
Dulany, U. Heath	Virginia.	Entero-mesenteric Fever.
Duncan, George K.	Tennessee.	Acute Gastritis.
Edmonds, Samuel C.	New Jersey.	Hectic Fever.
Eggleston, Joseph D.	Virginia.	Urinary Calculi.
Eshleman, Isaac S.	Pennsylvania.	Congestion.
Evans, J. Mason	Virginia.	Entero-mesenteric Fever.
Evans, Joshua R.	Pennsylvania.	Epidemic Cholera.
Fearing, Benjamin, Jr.	Massachusetts.	Phlegmatia Dolens.
Fisher, Preston	Maine.	Cynanche Trachealis.
Fitts, William F.	Alabama.	Oleum Terebinthinæ.
Fleming, Thomas M.	Virginia.	Digestion.
Flewellen, Edward A.	Georgia.	Cinædia.
Floyd, Frederic	Virginia.	Pathological Hæmatology.
Foote, Charles C.	Connecticut.	{ History and Medical Properties of Ergot.
Fort, Joseph M.	Texas.	Acute Gastritis.
Fox, Joseph M.	Kentucky.	Typhus Fever.
Friend, John Edward (M.D.)	Virginia.	Entero-mesenteric Fever.
Friend, George W.	Virginia.	Phrenology:
Fussell, Morris	Pennsylvania.	The Decidua.
Gaddis, Elijah Franklin	Alabama.	Malaria.
Gaither, Brice T.	Georgia.	Typhoid Fever in Middle Georgia.
Gale, Robert H.	Kentucky.	Milk Sickness.
Gary, Franklin F.	South Carolina.	{ Endemic Fever of Cokesbury, South Carolina.
Geare Frederic (M.D.)	New York.	Phthisis Pulmonalis.
Gegan, John, Jr.	Pennsylvania.	Intermittent Fever.
Gibbons, Thomas P.	Pennsylvania.	{ Certain Diseases of the Diastaltic Nervous System.
Glenn, Lucius B.	Alabama.	Acute Pleurisy.
Golding, Walter S.	North Carolina.	Laryngo-tracheitis.
Gorin, William H.	Kentucky.	Albuminuria.
Griesemer, Enoch E.	Pennsylvania.	Acute Rheumatism.
Haggard, William D.	Kentucky.	Entero-mesenteric Fever.
Hall, Samuel E.	Georgia.	Rheumatic State of Fever.
Hall, William M.	Tennessee.	Enteric Fever.
Hamer, Ellis P.	Pennsylvania.	Pleurisy.
Hamilton, George S.	Virginia.	Intermittent Fever.
Hancock, Charles	Virginia.	Typhoid Fever.
Hassenplug, Jacob H.	Pennsylvania.	Iodine and its Therapeutical Effects.
Havis, Minor W.	Georgia.	Menstruation.
Hazlett, Robert W.	Pennsylvania.	Physic.
Henderson, Andrew J.	Virginia.	Gunshot Wounds.
Herrick, J. Everette	New Hampshire.	Erysipelas.
Hershe, Christian	Iowa.	Pneumonia.
Heyward, James F.	Delaware.	{ A new Method of Dissolving Cal- culi in the Bladder.
Holbrook, William S.	Virginia.	Placenta Prævia.
Hood, Humphrey H.	Pennsylvania.	Inflammation.
Hope, Jesse P.	Virginia.	Inflammatio Pleuræ.
Howitt, John	Canada.	Acute Bronchitis.
Hume, William	Canada.	Acute Dysentery.
Hunter, George Baxter	Virginia.	Responsibilities of the Physician.
Huntington T. Romeyn	New York.	Scarlatina.
Huston, James M.	Virginia.	The Pulse.
Irvine, Patrick C. (M.D.)	Virginia.	Pneumonia.
Jackson, Winslow	Massachusetts.	Scarlatina.
James, Nathan	Pennsylvania.	Angina Membranacea.
Jenkins, William A.	Virginia.	Pneumonia.
Johnson, Emmanuel H.	Pennsylvania.	Endo-gastritis.
Johnson, William M.	North Carolina.	Dystocia Abortiva.
Judson, Oliver A.	Pennsylvania.	Iritis.
Kelly, Samuel H.	Virginia.	Cephalalgia Nervosa.
Keenon, John G.	Kentucky.	Pneumonia.
Keys, John	Pennsylvania.	Catalepsy.
Lamm, William A. B.	Georgia.	Epidemic Erysipel

NAME.	STATE.	SUBJECT OF THESIS.
Lane, E. L. C. (M. D.)	Illinois.	{ De Febribus Miasmaticis in Illinois Septentrionali.
Layton, Joseph	Ohio.	{ Oblique Inguinal Hernia.
Leinbach, Benjamin S.	Pennsylvania.	{ Rural Practitioner.
Lemmon, William	Pennsylvania.	{ Typhoid Fever.
Lewis, J. Henry	Texas.	{ Lobelia Inflata.
Line, William M.	Pennsylvania.	{ Intermittent Fever.
Lovejoy, James W. H.	Dist. of Columbia.	{ Acute Rheumatism.
Luckett, Francis E.	Virginia.	{ Pneumonia.
Mackey, James Howard	Pennsylvania.	{ Oblique Inguinal Hernia.
Madison, Robert L. (M. D.)	Virginia.	{ Comparative Anatomy and Physio- logy of the Nervous System.
Martin, William Henry	Kentucky.	{ Modus Operandi of Medicines.
Matteson, John C.	New York.	{ Acute Pneumonia.
McCorkle, John R.	North Carolina.	{ Dysentery.
McClung, John A.	Virginia.	{ Intermittent Fever.
McGrigor, Thompson L.	Virginia.	{ Puerperal Peritonitis.
McGuire, John G.	Pennsylvania.	{ Electricity.
McIntyre, De Witt C.	New York.	{ Anatomy and Physiology.
McNutt, Robert	Delaware.	{ Acute Rheumatism.
McWhinney, Arthur	Pennsylvania.	{ Meningitis Tuberculosa.
Meigs, James Aitken	Pennsylvania.	{ Hygiene and Therapeutics of Tem- perament.
Meisenhelder, Samuel	Pennsylvania.	{ Remittent Fever.
Mellen, George F.	Maine.	{ Necrosis.
Merritt, William (M. D.)	Virginia.	{ Comparative Physiology of the Cir- culation.
Miller, William Lamech	Pennsylvania.	{ Anæmia.
Miller, William Robards	North Carolina.	{ The Ovaries.
Milligan, Francis H.	Missouri.	{ Placenta Prævia.
Moodey, Joseph H.	Pennsylvania.	{ Variola.
Moody, Thomas H.	Tennessee.	{ Physiology of Digestion.
Moore, Ira L.	Massachusetts.	{ Typhoid Fever.
Moore, Mathew S.	South Carolina.	{ Mercury as a Therapeutic Agent.
Moore, Maurice A.	South Carolina.	{ Dyspepsia.
Morris, George W.	South Carolina.	{ Cinchona.
Morrison, M. Porter	Pennsylvania.	{ Modus Operandi of Medicines.
Mulford, Francis D.	New Jersey.	{ Tubal Fecundation.
Mullins, James C.	North Carolina.	{ Delivery of the Placenta.
Neff, Henry K.	Pennsylvania.	{ Anatomy and Physiology of the Heart.
Nice, Franklin B.	Pennsylvania.	{ Intermittent Fever.
Nice, George W.	Pennsylvania.	{ Cholera Infantum.
Oaks, Samuel	Pennsylvania.	{ Death.
Oden, J. Beverly	Virginia.	{ Percussion.
Overton, William M.	Virginia.	{ Entero-mesenteric Fever.
Owens, Bennett G.	Alabama.	{ Typhoid Fever.
Parker, Oscar F.	New York.	{ Rubeola.
Perkins, Joseph B.	Mississippi.	{ Pneumonia.
Perkins, Lewis W.	Virginia.	{ Remittent Fever.
Peterson, Bowman H.	New Jersey.	{ Typhoid Fever.
Phillips, William W. L.	New Jersey.	{ Menstruation.
Piatt, William A.	Pennsylvania.	{ Typhoid Fever.
Poindexter, Edward H.	Virginia.	{ Colica Pictorum.
Pratt, J. Richmond	New York.	{ Prognosis.
Proctor, Pelatiah R.	Canada.	{ Spinal Irritation.
Rankin, E. Davidson	Pennsylvania.	{ Moral Character of the Physician.
Rankin, William M.	Pennsylvania.	{ Retroversion of the Uterus.
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Rogers, Henry R.	Maine.	{ Rubeola.
Roper, Daniel W.	Kentucky.	{ Acute Meningitis.
Rose, Latinus Irvine	Virginia.	{ Rubeola.
Ruby, Cyrus B.	Pennsylvania.	{ Dysentery.

NAME.	STATE.	SUBJECT OF THESIS.
Rugh, Jacob W.	Pennsylvania.	Acute Peritonitis.
Russell, Preston W.	Pennsylvania.	{ Electricity, and its application to
Sandford, Robert J.	Virginia.	{ Electrolysis.
Saunders, Samuel	Virginia.	{ Nephritis.
Schively, George Singer	Pennsylvania.	{ Functions of some parts of the Human Frame.
Scofield, John S.	Kentucky.	{ Pneumonia.
Scott, A. Howard	Virginia.	{ Mechanism of the First Position of the Vertex.
Scott, William Walter	North Carolina.	Placenta Prævia.
Sharpe, William R.	North Carolina.	Pneumonia.
Simmons, Allen J.	Georgia.	Adynamic Fever.
Smith, Albert D.	Vermont.	Mercury.
Smith, Bart M.	Georgia.	Procreation.
Smith, James Gregory	Kentucky.	Inquiry into the Circulation.
Smith, Pembroke	Virginia.	Scarlatina.
Smith, Sandford F.	Missouri.	Acute Diarrhœa.
Smith, Walter R. (M.D.)	North Carolina.	Pneumonia.
Spruill, George E.	North Carolina.	Eudo-gastritis.
Squire, William H.	Pennsylvania.	Hydrocele and Hæmatocele.
Statler, Samuel G.	Pennsylvania.	Scarlatina.
Stoakley, William S.	Virginia.	Dropsy.
Stocker, Jesse	Virginia.	Reproduction.
Stone, Samuel A.	Virginia.	Remittent Fever.
Stoner, John	Pennsylvania.	Medical Experience.
Suesserott, Jacob L.	Pennsylvania.	General Bloodletting.
Taylor, James	Pennsylvania.	Digestion.
Taylor, J. Marcus	Mississippi.	Typhoid Fever.
Taylor, Julian	Virginia.	Hysteria.
Thom, J. Pembroke	Virginia.	Oxygen.
Thomas, Robert W.	North Carolina.	Puerperal Peritonitis.
Thompson, Stephen S.	Kentucky.	General Indications.
Thomson, John A.	Delaware.	Malformations and their Causes.
Tipton, Richard H.	Ohio.	Hysteria.
Tullis, Thomas Erskine,	Alabama.	{ Epidemic Dysentery as it occurred in Geneva, Georgia, in the summer of 1849.
Turner, Charles P.	Pennsylvania.	Causes of Deafness.
Tyson, John Ambrose	Tennessee.	Pneumonia.
Umstad, Henry U.	Pennsylvania.	Puerperal Fever.
Vaughn, George W.	Alabama.	Melituria.
Venable, Richard N.	Virginia.	Report on Puerperal Fever.
Vernon, Elias	Canada.	Accidental Hemorrhage.
Vollum, Edward P.	New York.	Aneurism.
Wallace, James J.	Pennsylvania.	Scarlatina.
Walser, Theodore	Switzerland.	Assimilation.
Ward, Erastus B.	Virginia.	Entero-mesenteric Fever.
Ward Meredith G.	Tennessee.	Acute Hydrocephalus.
Warren, Edward (M.D.)	North Carolina.	Scarlatination.
Weeks, William C.	Virginia.	Gonorrhœa.
Weir, John M.	Virginia.	Toxicology.
West, William H. Jr.	Virginia.	Conduct of Natural Labour.
Wilson, John W.	Virginia.	Physiology of Respiration.
Wingfield, Alonzo C.	Georgia.	Empiricism.
Witman, Henry O. (M.D.)	Pennsylvania.	Acute Dysentery.
Wolf, John A.	Pennsylvania.	Entero-Mesenteric Fever.
Wood, Charles S.	Connecticut.	Menstruation.
Wright, Thomas E.	Virginia.	Pneumonia.
Wyker, Alfred	New Jersey.	Menstruation.
Young, George W.	Missouri.	The Heart.

The *ad eundem* degree of Doctor of Medicine was conferred on

Thomas G. Meachem, M.D., and on } of New York.
Charles G. Pomroy, M.D.,

Total, 227.

R. M. HUSTON, M.D., *Dean of the Faculty.*

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